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ABSTRACT

Sustainable development is comprehensive, promoting balanced planning for economic development and protection of natural resoures. It takes into account both the long-term and short-term environmental impact of society's actions. This seminar stressed that the most important component in achieving sustainable development is the inclusion of all sectors in cooperative decision making; business, government, scientific/academic, and civic. By working together, these sectors can end the traditional advocacy model through dialogue and joint problem solving. The seminar's objective was to bring sustainable development to the public's attention and to initiate dialogue among key representatives of the various sectors. This document includes the presentation made by 29 representatives from government, corporations, non-government organizations, and future leaders on the topic of sustainable development. (Author/CW)

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SUSTAINABLE DEVELOPMENT: A CALL TO ACTION

Proceedings of a two-day seminar hosted by the United States Senate Committee on Environment and Public Works and the World Bank, Washington, D.C.

August 4-5, 1988

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SUSTAINABLE DEVELOPMENT:
A CALL TO ACTION

Proceedings of a two-day seminar hosted by
United States Senate Committee on
Environment and Public Works
and
The World Bank

Washington, D.C.
August 4-5, 1988

Sponsor: **Legacy International**
346 Commerce Street
Alexandria, VA 22314
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PROCEEDINGS FROM THE SEMINAR ON SUSTAINABLE DEVELOPMENT: A CALL TO ACTION

August 4-5, 1988
Washington, D.C.

Edited by: Mitra Nafissian

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INTRODUCTION:

On August 4-5, 1988, more than 150 business, nongovernmental organization (NGO), government, and civic leaders attended the two-day seminar, "Sustainable Development: A Call To Action," sponsored by Legacy International. During the first day on Capitol Hill, congressional leaders and officials from development agencies and multinational development banks presented the United States' and various other nations' responses to sustainable development. On August 5, at the World Bank, corporate and NGO leaders addressed different approaches to sustainable development. Young leaders from the Chesapeake Bay, the Mediterranean, the Canadian Great Lakes, and the Caribbean made presentations on the status of efforts for sustainable development in their regions.

Sustainable development is comprehensive, promoting balanced planning for economic development and protection of natural resources. It takes into account both the long-term and short-term environmental impact of our actions.

The seminar stressed that the most important component in achieving sustainable development is the inclusion of all sectors in cooperative decision making -- business, government, scientific/academic, and civic. By working together, these sectors can end the traditional advocacy model through dialogue and joint problem solving.

The seminar's objective was to bring sustainable development to the public's attention and to initiate dialogue among key representatives of the various sectors. We hope that this printed record of the proceedings will encourage the involvement of many more concerned individuals.

Ira Kaufman
Project Director
Legacy International

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OPENING

Presentation by
ED JOHNSON
Director, Developing Countries Staff
Office of International Activities
U.S. Environmental Protection Agency

I am very pleased and also privileged to welcome our out-of-town visitors to Washington, D.C. and to welcome all of you to this conference. Our administrator, Lee Thomas, feels that these kinds of activities are extremely important -- that the EPA and the United States have the responsibility to share their knowledge and experience in the environmental area with others, and also to learn from others so that we can benefit in carrying out our environmental programs. I think this kind of conference provides an excellent opportunity to do that.

This program is unique in bringing together representatives of government, environmental groups, industry, academia, and international organizations. It has become clear over the years that cooperation among all of these sectors is essential to achieving our environmental goals. EPA's own experience demonstrates that. We began life in 1970 in a very adversarial situation with industry, state and local governments, and environmental groups. Over the years, that relationship has changed into one of much more cooperation, and we find that through this cooperation, we are making much more progress in achieving environmental goals than we ever achieved through an adversarial process.

We all need to be concerned about the environment, simply because it affects us all. Problems are not local but transcend national boundaries; some are even global in nature. The World Commission on Environment and Development, in its report, *Our Common Future*, brought out clearly the interrelated nature of many of these problems. For example, it cited the need to pursue sustainable development -- development that maintains the environment necessary for its future continuation -- development that assures that people everywhere reap the benefits in terms of improved health and welfare. Among the most important resources in achieving sustainable development and the improved health and welfare it can provide, are the youths of the world. They are our future environmental leaders.

I congratulate Legacy International for providing the YES (Youths for Environment and Service) program as a very important element in assuring that this leadership is there when we need it. I trust that the activities of the Sister Seas Program have added to your environmental perspective and will prove valuable when you return to your day-to-day activities.

I wish you a productive session here in Washington for the next two days, but I certainly hope that you don't have to work so hard that you don't get a chance to visit our beautiful city and see some of its sights. Again, welcome and thank you for the opportunity to attend part of your program.

CHAPTER 1

THE CHALLENGE OF SUSTAINABLE DEVELOPMENT

Presentation by
AMBASSADOR MOHAMED SAHNOUN
Algerian Ambassador to the United States
Member World Commission on Environment and Development

Let me from the outset express my great appreciation and esteem for those dedicated people at Legacy, YES, the U.S. Senate Committee on Environment and Public Works, and the World Bank who worked very hard to enable us to gather here and exchange views on this very important concept of Sustainable Development.

In my brief remarks, I will attempt to recall how the World Commission on Environment and Development (WCED) came to espouse and promote this concept. For those of you who did not know the origin of the Commission, it is worth mentioning that it was created by a resolution of the General Assembly of the United Nations adopted unanimously in the fall of 1983. This resolution requested the Secretary-General of the United Nations to establish an independent commission which would recommend ways to translate our concern for the environment into greater cooperation among all our countries, and lead to the achievement of common objectives that take into account the interrelationship between people, resources, environment, and development.

Mrs. Brundtland, now Prime Minister of Norway, was given the task of chairing this Commission and selecting the other twenty-one commissioners (her criteria were experience, motivation, and geographical representation). Under her vigorous leadership the Commission worked three years to produce an extensive report which we have entitled *Our Common Future.*

Before drafting the report however, the Commission went on a thorough fact-finding mission, gathering information in many different ways. The Commission established expert committees on energy, industrial development, food, and security. We held public hearings in the countries we visited, in all continents. And these public hearings were attended by all categories of people including representatives of nongovernmental organizations and interest groups in scientific, social, political, and business fields. Special attention was given to the contribution from the youth movements and from youths in general. In fact, we were quite impressed by the keen interest demonstrated by youths for these issues, as well as their strong desire to not only reach out for information, but their ability to translate it into positive and concrete action.

The debates in the public hearings were extremely lively. We had to deal very often with conflicting views not only on objectives and strategies, but also on methods and the validity of the evidence gathered from governmental or nongovernmental sources. Drafting the report and coming to a consensus among twenty-one commissioners was not going to be easy either. Within the World Commission, there were different views, different assessments, and different interests, but the seriousness of our common concern was such that every effort was made by every one of us to come out finally with a clear and strong message. This message, ladies and gentlemen, is that the world community should engage in promoting in the future what we call "sustainable development." We very simply define sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. I need not go into an analysis of the report which I hope will be accessible to you and which needs to be considered as a working document for anyone interested in promoting sustainable development.

But let me underline one important aspect, and that is the connection we have made between poverty, environmental degradation, and international cooperation. We have emphasized the point which became so strong in our hearings -- poverty itself polluted the environment. Those who are poor and hungry will often destroy their immediate environment in order to survive. You have all seen on television or in newspapers the dramatic situation the Ethiopian and the Sahel population have gone through in the early eighties when famine and drought plagued the land. Thirty million people were affected. Many of them died of starvation. I myself lived in Ethiopia for nine years. I have known this country and known the potential for development which exists. Do you know that 45% of the Ethiopian land was covered by forests at the turn of the century? Today, less than 4% retains this vital green cover. People who are poor cut forests for household fuel. Poor people overgraze grasslands, poor people overuse marginal land. The result is that each year six million hectares of dry land are added to the existing desertified areas of the world.

The desertified areas in Africa alone constitute 40% of the continent and three million hectares are added to this desert each year. Without conservation measures, the total area of rain-fed cropland in the Third World would shrink by around 20% by the end of the century because of soil erosion, salinization, depletion of nutrients, and pollution. The total loss of productivity might be around 30%. In the same amount of time, another billion people will be added to the world's population and more than 90% will be born in developing countries, mostly in already congested cities like Cairo, Mexico City, or Sao Paulo.

Many scientists are telling us that part of the problem lies also in the large amount of emissions from industrialized areas with their polluting plants, creating what has been labelled the greenhouse effect. One wonders indeed why Africa has experienced repeated droughts over the last decade.

It is fair to say that we have often failed to see that sustainable economic growth, poverty alleviation, and environmental protection are mutually reinforcing; and we have failed to ensure that they were fully integrated in development planning and financial resource allocation. We have to admit that these are difficult choices. Governments are called upon to meet urgent national priorities, ranging from national defense and energy imports to housing and food production. The demands of hungry, hopeless families can't wait. Trees don't vote.

But in fact there is no national priority which can be fulfilled at the expense of environment; in other words, at the expense of the natural resource base. Cutting forests may seem necessary to earn foreign exchange for energy imports, debt amortization, or other essential purposes. But clearing forests may also reduce the retention of water in a watershed, may lead to floods, dam siltation, and erosion of land needed for food production. The money earned from forestry exports is entered in the books as income. The true cost, including the environmental effects just mentioned, is never set against this income.

Multilateral and national development agencies can be instrumental in protecting these assets and in promoting policies of sustainable development. We have to probe deeply into the true cost-benefit equations of current resource exploitation.

These are steps that governments can and should take in the best interest of their country. It now appears that the World Bank, its affiliates, and many other aid sources will be prepared to reward such steps with a premium for projects that conserve soil, forests, and water, and that shifts some attention away from the big cash-crop plantations to help small farmers produce more food.

A better integration of the natural base and environmental assessment in economic planning and development strategy should gradually be promoted. This has to be done, of course, in a fashion where learning and the decision-making process should interact. University curricula adapt themselves to technological changes continuously. So, the link between environment and economics in a new concept of sustainable development needs to find a place in universities.

The environmental machineries in our countries are still today rather insignificant in the decision-making process. A new approach has to be devised whereby the sectorial departments fully take charge of the environmental dimension as a natural resource base and not only as remote pollution-effect without immediate danger. It requires a real revolution in academic and political thinking.

Sustainable development also means that we must start a courageous and energetic population policy which underlines the fact that a specific ecosystem has its own limit which cannot be stretched without endangering the well-being of the whole community.

For this, as for the other objectives, the role of youth, women, and the mass media can be of vital importance. Youth organizations in particular can increase public awareness of the interrelationship between environment and development, and encourage community action for the protection of the environment. Training and acquisition of skills in this area can open up a vast field of interests, and impose efficiency in local and regional policy.

I strongly believe that changes will only occur if the young generation arms itself with the conviction that it can work successfully for a better environment.

Presentation by
JOAN MARTIN-BROWN
Senior Liaison Officer
United Nations Environment Programme

I have had the privilege, over the past two to three weeks, of being with you and many of the different participants in this conference in different contexts. I have also had the privilege of knowing you over the past two to three years, and I have watched the evolution in your own country, as you have become increasingly effective advocates for environmental management and sustainable development. Furthermore, I have had the privilege over the last seven years of having many young people from many countries serve as voluntary interns in my office, which means they work from nine to five, forty hours a week, without pay. They continue to bail me out so that I can meet my schedule and demands. To add to that general burden, they usually promise me that when they leave my office and go back to their home country, they will, in fact, become prime ministers. It is that promise that holds great hope for the future of us all.

This may, in fact, be the first time in history that my generation has appeared to act in deliberate and direct competition with our children. I apologize for that. This situation was not deliberate in its intention, but it came about by the maximization, if you will, of a long tradition. Earlier, when I spoke with many of you about how I perceive we are moving towards sustainable development, I referred to the need for three things: a state of knowledge, a sense of place, and a state of mind. I spoke about the importance of a state of knowledge as it relates to your capacity to integrate the knowledge of biology and botany, and the other natural sciences, into the context in which you are operating.

This morning we were talking about your mandate as future leaders. When you become prime ministers, you must have at the Parliament and at your cabinet table meetings, those who have the scientific knowledge and the capacity to carry this responsibility in your respective nations. That is a process that many national leaders have now begun to address. In fact, the new president of Uganda, within a year after his election, was at our headquarters in Nairobi asking for information which we had been preparing for him. We showed him where the arid lands were, where the most productive soils were, where the water bases were, and what the developmental and demographic potentials were. He was able to make an assessment, and thus an overview, of his nation.

However, the next step after gaining knowledge is to empower the colleagues around the table with similar insight, so that they could go back to their respective departments of transportation, health, education, etc., and relate to the issues of nature and ecological systems within their own context, including development.

It is critical for a leader to have a sense of place in understanding the destiny of one's people, and the positions that afford their uniqueness and their strength. It has been popular to look too much to the future, too fast; or to look at those that would be alleged "developed" and to deny the fact that for thousands and thousands of years, many cultures survived very well, without the problems that confront us globally today. They must have known *something.*

The future leaders, in fact, have the keys to the future. I spoke of a state of mind. There is a story about three people on an island. A huge tidal wave washed over the island and inundated it. Before the people were drowned, each person could have one wish granted. The first person said he wanted twenty-four hours to dance and party. The second person wanted twenty-four hours to see the great wonders of the world. And the third person asked to have immediately delivered all the books that were ever written about the power to live under the sea. That is the kind of state of mind that future leaders must have, if in fact their national destinies, and therefore, the destiny of the world community, can be properly addressed.

You future leaders must be compelled to focus on a future that is wedded to a vision stretching a minimum of five generations. I beseech you to place the number five before you, so that with every act you take as a national leader, you have a sense that it will sustain the next five generations.

I beseech you to have a state of mind that can embrace the true sense of a future commitment predicated on an ethic of public service; a public service that empowers others to participate on a quality basis with you in achieving sustainable development; a public service stance that allows you to see yourself in partnership with women, men, youth, and religious and industrial leaders before the common view of a society we wish to have. I beseech you to think of leadership as a privilege, not as a right -- as a privilege that will never make you rich, but will give others in all walks of life, a greater capacity. Indeed, it is going to take that kind of a vision of leadership to be able to create a political will that compels people to want to integrate environmental management with economic development. "Development" is not a word that is synonymous with "industrialization."

As future leaders, you can encourage your society to investigate aspects of economic theory that may, in fact, be infused with ways that we have lost sight of and have that knowledge as the basis of policies, not political contingencies.

I would hope that you would understand that political will comes from a broad-based population that has been empowered with enough knowledge and understanding of its own destiny, that it becomes a critical mass of voice that will say to the leadership, "You will." That is, in fact, the definition of political will.

Finally, I would hope that you understand in your leadership role of prime minister, that every day you stay in power is the day that many people at the village level have decided that their destiny is well-placed in partnership with you, in your hands. The classical, real-world voice of the village, coupled with the vision and action of knowledgeable public leadership, is a fundamental partnership of the twenty-first century, and critical to achieving sustainable development.

Thank you.

Presentation by
J.E. RASH
President
Legacy International

When we speak about "the challenge of sustainable development for emerging leaders," we must begin by understanding the difference between participating in projects, and being a leader. Certainly youths and young adults must play a significant role as workers in environment and development efforts. But young adults as leaders must have another mentality, a different training, a broad-based education and learning process. To serve as leaders in today's world, our young adults must be able to come up with integrated approaches to the issues of environment and development. They must be able to think critically and creatively.

I remember the story of a wise man who was challenged to distinguish between a perfectly crafted glass flower and a real flower without using his senses of touch or smell. The wise man said, "Many types of questions are given in philosophy, religion, and spirituality. This question, however, is a question of horticulture." He went out, caught a bee, and set it free in the room. The bee, of course, flew to the real flower. That kind of joining with nature, that critical, creative thinking, is what we must help to create, for it is this capacity that enables us to be truly responsible -- truly "able to respond" to the situations before us.

The potential for response-ability must be evoked through an educational process and system. As the first step in this process, we must begin to understand human attitudes and conditioning, the patterns of our thoughts, the paradigms within which we live -- to "know ourselves," as Socrates enjoined.

All of us have certain pre-set prejudices and biases that influence how we interpret the world around us, and cause us to accentuate one point of view over another, often to the exclusion of other perspectives. This could be described as a kind of unconscious, conditioned passivity, or what some term "linear thinking." It is not that human beings are ignorant or inherently incapable of thinking in other ways, but we have been improperly trained. From early childhood throughout our educational process, we have been shaped by educational systems that are, of course, culturally influenced. In some parts of the world, those systems take the form of an established school system. In other parts of the world, they are based on the passing down of skills and knowledge from parent to child and village elder to youth. But in almost all cases, the element of cultural bias is present.

"Culture" does not only refer to distinctions of nationality, religion, traditions, or language. Culture also includes people's values, assumptions, communication styles, and ways of perceiving and interpreting the world around them. For example, corporations, environmentalists, government officials and organizations, intergovernmental organizations, citizens, and advocacy groups can each be seen as distinctive cultures, with their own interests and commitments.

It is natural and, to a certain degree, necessary that our educational systems be culturally biased -- that they reflect the values and needs of a specific culture. The "values" inherent in that bias, however, are better understood and utilized for the common good if they are made known instead of remaining implicit and/or hidden behind a bias which interferes with that expression.

Now, however, our educational systems must be adjusted to reflect the new recognition that we are also part of a global culture and have a global cultural responsibility. We must create a new mentality of choice, where choice is based not only on an awareness of issues and facts, but on an awareness of the "issue" of our own local, culturally-biased assumptions and their effects on global decisions.

Virtually all local work is globally related. As Professor Harkabi of Hebrew University points out, nations typically have both a political "grand design" and specific policies which may or may not reflect that grand design. So, too, there is a global grand design for environmental responsibility -- a grand design which we are calling "sustainable development." This grand design can not be just espoused. It must be reflected in local policy.

Beginning with children in early childhood, we have an opportunity -- indeed, we are mandated -- to educate towards this responsibility, this grand design. We must begin at the beginning, starting with early reading texts that reflect environment and development issues, and introducing skills in communication and conflict management as children mature.

At the basis of this education must be a process and system that encourage self-esteem. When individuals are forced to cope with their reality in ways that go against their traditional value system or ethic, it reduces the importance of the traditional value system, and consequently reduces the individuals' self-esteem. Yet it is self-esteem that allows an individual to play a role in future development. It is based upon one's traditional values that one can take personal responsibility, and have a sense of pride in one's own culture, one's cultural integrity. We know how cultural integrity suffers, for we have seen the vulnerability of the starving, the homeless, and the oppressed throughout the world. We have seen that as people lose self-esteem because they are unable to fulfill their traditional roles even on a survival level, they become more vulnerable to manipulation and exploitation.

Those of us who are operating in the areas of environment and development must understand traditional value systems and their sources; the assumptions that accompany them; and the degree to which they facilitate implementation of the grand design -- the design which ultimately reflects human beings' relationship with nature and with life.

We are often cautioned to "avoid imposing our will on other cultures." But how many of us really understand what that means? "Imposing" does not only refer to imposing a system or a "how to do it" mentality. It means imposing our judgment of "right" and "wrong," or our definition of the "best way" to cope with reality. It can also mean operating and making decisions based on unconscious assumptions of what we want, as opposed to a conscious search for mutually beneficial options. Thus we ourselves must undertake an educational process, beginning with reflection upon our own values and assumptions in dealing both with governments and with individuals in other communities, as members of a more diverse community.

Yes, we all are part of a larger global community, and for that we have to renew our understanding of what sages long ago referred to as the "reciprocal maintenance of the planet." "Reciprocal maintenance" means that we have a duty to care for all that cares for us, for the planet and all of its creatures. It is a concept of non-trespass, based on an awareness of the delicate balance in our relationship with nature and with natural systems. A criteria or standard for development is also inherent in the concept -- i.e., maintaining the evolving developmental processes in a sustainable way.

One of the possibilities that frightens me most is that human beings have so suppressed their natural response to environmental issues that only the most unnatural occurrences, (like the recent polluting of United States beaches, the global warming, and the toxic air over Mexico City), can reawaken our sense of being a part of nature. And if, somehow, that sense in us is gone, we must at least educate people to its history, trying to create a new ethic. If it is *not* gone, then we must re-stimulate it in the hearts of human beings, of future generations.

We must also understand what motivates youths to participate in environment and development efforts. In areas where young people are formally educated, they tend to be interested in career opportunities. In many developing countries, these opportunities lie in government or in scientific efforts that are government-related. Few young people outside of the developed world will find opportunities in non-government, environmental advocacy organizations. For youths who are not educated, (which are the majority) their career may strictly be to survive.

Across the spectrum, the tendency for youth, as for other people, is to compromise environmental goals in the face of immediate survival needs.

The challenge, therefore, for those in the fields of environment and development is to work for the future not only in their specific areas of expertise, but to effect change by addressing the educational needs of today's and tomorrow's children and youths. They must be advocates for change of the educational systems in which they themselves were brought up. They must prepare an environment for learning, beginning in the homes as well as the schools, with real issues that evoke the deepest human emotions. They must help youths to develop understanding of the rights and interests of other cultures and sectors, and present models that go beyond adversarial approaches and accept the need for other points of view. In addition, I would recommend the establishment of environmental education curriculum, beginning in the elementary grades and culminating in the final years of high school in a required environmental studies programs that would include a component of grassroots activity.

If indeed we can combine efforts in our areas of expertise with efforts in the area of education, we will succeed not only in addressing the needs and issues of the next twenty to thirty years, but in preparing a new generation of leaders to carry on our efforts after us. As Joan Martin-Brown of the United Nations Environment Programme (UNEP) has suggested, "Every act taken by national leaders must be based upon a sense that it will sustain the next five generations."

Dr. Tolba, Executive Director of UNEP, points out that there are two kinds of natural resources: renewable and depletable. Renewable resources are those that grow, such as fish and forests, and those that are replaced by the undisturbed workings of the natural world, such as soil and oxygen. Depletable resources include oil, coal, and mineral ores. Parallelling this differentiation, I would suggest that there are two kinds of educational resources: one that creates thinking, challenging adults and is therefore renewable; and one that exploits and consequently depletes human capabilities. The challenge is to expand the capacity of approaches that create renewable human resources, and to reduce -- or indeed in the case of education, to end -- the use of approaches that deplete human resources.

In most parts of the world, the formal school systems employ a didactic educational process. I would propose a shift in emphasis away from the fact-oriented, "nailed to the chair" passive lecture model and towards the creative and critical thinking model. Young people must be given more responsibility through dialogue. They should be engaged in discussion, so that their curiosity can be piqued and their minds stimulated to try to understand the complex world they live in. We must present problems and encourage participation in problem solving. We must avoid dwelling on labels of "right" and "wrong," "good" and "bad," and allow the work itself to guide the efforts of youths. We must teach in ways that are challenging, and at times point out that some choices temporarily are between "bad" and "worse" in the progression of creating a sustainable future. In the proper environment, children will be motivated, not discouraged by this honesty and realism.

In addition, we are challenged to move from emphasizing information-based success to emphasizing the application of information and knowledge on a day-to-day basis through experiential education. Finally, we must provide a more global education. We must prepare youths to understand the world they live in by encouraging them to take advantage of the many cross-cultural experiences that this world offers. Where there are no school systems, grassroots development workers must train adults in new skills that reflect the needs of sustainable development, with the understanding that these skills will be passed on to the children.

Education for a sustainable future begins with children. But all the words, all the texts, all the curriculum materials, and all the good intentions will mean nothing unless the adults and the adult systems that surround these children are also struggling to reflect a mentality of sustainable development. As Dr. Maria Montessori pointed out, children have absorbent minds. They watch the models that are before them.

I am reminded of a story of Mahatma Gandhi. A woman from a distant village brought her son to him and said, "Mahatmaji, my child eats too much sugar. Please tell him to stop eating so much sugar." Gandhi said, "Come back in three days." The woman and her son walked the many miles back to their village, and returned to Gandhi three days later. Gandhi told the boy, "Stop eating so much sugar." The mother said, "I'm a poor woman. It has taken me two entire days to make this trip, just for you to tell my child to stop eating sugar. Why couldn't you tell him that when we first came?" Gandhi replied, "Because I needed three days to stop eating sugar myself."

Governments and industries, parents and teachers, are challenged to create products, systems, and environments which reflect the concepts of sustainable development, so that the children and youths who are being educated to these concepts will not grow up with models of hypocrisy around them. Governments must help with appropriate legislation. The corporate sector must be encouraged and continue to invest in the research and testing of alternative production methods. It should design and see that planning and spending for a sustainable future goes on the plus side of the ledger, not the minus side. Governments, industries, and corporations need not be perfect models. Rather, they must clearly and continuously articulate the basic premise of struggling toward a sustainable future, and set the example of constructive self-criticism towards this end.

Finally, it is important that individuals in the fields of environment and development be equipped with intercultural and cross-cultural skills. Environmental problems are not limited by borders, nor can our efforts to solve them be blocked by the barriers of national or cultural differences. We must learn to work with people outside of our countries and subcultures, understanding their differing assumptions, methodologies, and points of view.

A critical application of cross-cultural skills lies in the creation of dialogue between different sectors within the same society. You who lead the future are challenged to create forums where these different interests can be introduced clearly and engage in constructive communication and negotiation, or what scholars now call the "synergistic" approach to negotiation. To assist in this process, I submit to you that it is necessary to introduce cross-cultural mediators into the processes of planning, negotiation, and conflict resolution at every level, from the earliest stages through completion.

As we explore cross-cultural approaches to communicating about the issues of environment and development, we will simultaneously be addressing other issues of importance in the world today. We will be addressing issues of prejudice and bias in one of the most dynamic forms available -- this interchange on the survival of the human race.

It is not through confrontation, nor through conferences, summits, and treaties alone that the issues of environment and development will be resolved. Rather, they will be resolved when the generation of leaders has emerged whose normal perspective encompasses this greater view of the future.

Human beings have the capability to address the issues of environment and development in new ways -- and, I believe, to solve them. It is you who must take up this challenge, who must work to stimulate both the formal and the informal systems for those new ways to be realized.

Thank you very much.

Presentation by
WILLIAM EICHBAUM
Undersecretary
Executive Office of Environmental Affairs
State of Massachusetts

I am delighted to be with Senator Mathias and with Moe Lynch with whom I have worked for the last eight years on Chesapeake Bay problems. I am also delighted to make new acquaintances with Ira Kaufman and the people from Legacy International and the Sister Seas Program. I think the effort to bring people together from around the world in order to look at specific problems and bring new information to light about these issues, and then to go home with additional insights, is extraordinarily valuable.

One of the things that Senator Mathias emphasized was the long history of conflict between Maryland and Virginia. It might be useful, particularly in this location, at the nation's capital, to go a little bit more into that history. At one period, when the former North American colonies were groping to become more organized, after the American Revolution, the confederacy was the form of organization. It was a somewhat loose collection of states that viewed themselves as largely independent of each other. Well, as had been the history, and as would be the history thereafter, Maryland and Virginia began to get into terrible arguments over the oysters in the Potomac and in the Chesapeake Bay. This conflict finally reached the point where it was decided that somebody had to be brought in to mediate. There was a gentleman living in a large white house on the Potomac -- George Washington -- who was asked if he would mediate the dispute between these two states. As a result, a gathering was held in Annapolis of a number of states to find some better way of resolving economic conflicts amongst themselves as represented by the case of Maryland and Virginia fighting over the oysters. Not very many people came to that first meeting in Annapolis, so they decided to have a second meeting in Philadelphia the next summer. That was the Constitutional Convention which gave rise to the Constitution of the United States and the current form of government which we enjoy.

I think that is an interesting and a relevant bit of history since in these two days we are talking about the problems of sustainable development. What the folks did two hundred years ago was an attempt to provide an organization of government which would, among other things, regularize economic trade and do so in a way which insured that many of those economic resources would be usable both for that current generation as well as for future generations. In many ways, their effort was a forerunner of the kind of cooperation which the concept of sustainable development articulates today.

During the break somebody asked me what I do. I said that I was a state bureaucrat from Massachusetts. "What are you going to be talking about?" I said, "Ethics." He looked at me with some surprise -- after all, what does a state bureaucrat know about ethics? And it is a difficult question. I am not a scholar, I am not an academic. I am a working environmental professional. But having been that for the last two decades, one of the things that seems to be patently obvious (whether it's in this country or in many other countries around the globe) is that the mechanisms that are in place, by which the government attempts to protect and restore the natural environment and public health, are simply not adequate to achieve the total task.

In the discussion of the previous panel you heard about the laws, statutes, regulations, and court cases that we pursue in this country in order to regulate behavior to protect the environment. Another aspect of the U.S. approach is through a variety of management activities, whether river management, management of the public lands, or protection of endangered species. Whatever the specific subject, we have both the regulatory model and a management model. But quite frankly, we can't buy all the land and we can't set all of the numbers for the standards that need to be observed. Simply stated, the task of protecting and preserving the environment is larger than the capacity of government acting alone.

This point is well illustrated as we increasingly learn that much of what we must do to protect the environment is embodied in what we ourselves as individuals do. As Senator Mathias suggested, the young man or woman changing the crank case oil and just letting it drain down the street into the river -- that's hard to solve with government regulation.

At the other extreme, we see emerging international problems such as depletion of the ozone layer, the greenhouse effect, deforestation. These are clearly worldwide issues in which government regulation amongst the many nations of the world would be very difficult.

So, if we are to build a new aspect to our effort to protect and preserve the environment, I believe it's going to have to be founded in a stronger sense of ethics -- ethics regarding individual behavior, and ethics regarding how various components of society deal with each other within that society. Further, I think, ethics is really one of the foundations of bringing about and making firm international agreements and understandings. Such agreements have to be founded on the principle of commonality; commonality is built by shared and mutually understood ethical values.

The importance of ethics was brought home to me as a result of a research effort known as the Coastal Seas Governance Project. I was part of a team that visited the Baltic Sea, the North Sea, the Inland Sea of Japan, and the Chesapeake several years ago. We visited with forty or fifty government leaders, citizens, and scientists in the Baltic. In trying to understand the history of the Baltic nations, the movement to form the Helsinki Convention in the early 1970s, and its ratification in the late 1970s, one of the questions we asked was, "Why did you do it?"

Senator Mathias suggested that one of the reasons we acted in the Chesapeake Region was because of the study which he so courageously led and which he provided the federal guidance to complete. And that study was important in the Chesapeake. When we asked the question in the Baltic, "Why did you begin to do something?" we found a very different answer. The most common answer we received from Poland to Finland to Sweden, came in the form of the name of a book -- *Silent Spring* by Rachel Carson. This has to remind us of the power of an idea, the power of an ethical principle to lead nations and people to begin to change the way they act in respect to their environment. Think for a minute about the title of that book -- *Silent Spring* -- no sound of insects, no sound of birds. That's what she was writing about, primarily in association with pesticides.

Looking back further than Rachel Carson, one of the great thinkers about environmental issues in this country was a U.S. forester. His name was Aldo Leopold and he wrote a book called the *Sand County Almanac*. This book was published in 1946 and unfortunately, forty-two years later, it still remains one of the best. (I don't say "unfortunately" because it is meager. I say "unfortunately" because there has not been much better thinking on the subject in the forty years since then.) *Sand County Almanac* is one of the best articulations of the need to bring the content of a new set of ethical values to environmental concerns. Leopold suggested that there have been three great ethical developments in human society. One was people learning to get along with each other. The other was people somehow figuring out how to organize in a larger group -- a nation, a community. He suggested that the third ethical evolution would be for people to learn how to get along with the world: what he called a "land ethic." He said the "land ethic" simply enlarged the boundaries of the community to include soils, waters, plants, and animals, or collectively, the land. He went on to say that a land ethic changes the role of Homo sapiens from conqueror of the land community to plain member and citizen of it. It implies respect for their fellow members, and also respect for the community as such.

Now, since 1946, we've made a lot of progress around the world in building institutions, passing laws, and changing some of our behavior. But as I've suggested, I believe what we've accomplished is not adequate. We still need to wrestle and integrate the ethical values of environmental and resource protection more into our lives as individuals and as nations. There have been numerous efforts over the last several decades to explore these ideas. We are reminded of them by the titles of books, perhaps the title of a course taught somewhere, and phrases. Examples which come to mind are:

"Small is Beautiful." This was not only the title of a book but also embodied a philosophical idea of returning to a pastoral life style. While few completely changed their mode of living, the idea of frugality has informed the growing view in all of society of the need to conserve energy.

"The Tragedy of the Commons." Another title suggesting that common resources such as forests and fisheries, are no longer wisely managed for present and future generations but are allowed to be exploited for the immediate benefit of a few.

"Limits to Growth." This work of the Club of Rome suggested that there are absolute numerical limits to the possible exploitation of the earth's resources and that exceeding them would spell human and ecological disaster.

"Don't Foul Your Own Nest." This timely admonition, applied to the world's environment, suggests that it is no longer possible to produce whatever is desired and simply put a black box at the end of the stack or pipe to control wastes. Perhaps some wastes or materials should not be produced at all.

"Biological Diversity." This concept, a scientific elaboration of Leopold's ideas, provides the basis for protection of species, population, and a genetic pool, of as diverse a sampling of natural fauna and flora as possible.

"Sustainable Development." This is a concept which embodies many of the elements of these other efforts in order to elucidate some ethical principles, especially in the relationship between economic development and environmental protection. It points out that there are limits to the degree to which we can exploit today's resources, given dollars and technology. Nonetheless, there is the need to meet the aspirations of people around the world. They should be met in a way which assures that future generations can meet their aspirations and have a physical and natural environment which will support those aspirations. This is not too much different from a lot of the earlier thinking. I'm convinced that we still need to bring a larger understanding amongst people and nations about these precepts that have to do with values --more than what has been done today. *Our Common Future* is an important element in that effort.

As we think about that, I'd like to suggest several values that, I think, are important. One is the notion of fragility. When we think of Chesapeake Bay or any marine environment -- those of us who have lived along it for many years and look back in history -- we see a powerful Bay that a lot of people have gained their livelihood from. Many lost their lives doing so. However, if you think of it in another way, it's a little piece of water that has an average depth of about twenty-five feet into which the wastes of a society of thirteen million people are dumped every day. The notion of global fragility has probably not been more graphically represented than in the photographs which we've all seen of the beautiful but delicate spaceship earth taken from space.

The second value is the notion of reverence for the earth, of caring -- of caring for that community of land, of caring for each other -- societies, individuals in the present and also for future generations. If respect in a fundamental sense is not offered to that community, then not only will practical opportunities be lost but, more importantly, the responsibility of stewardship will have been abandoned.

There are some societies, I think particularly of Sweden, where these values of appreciation of the earth's fragility and reverence for the environment are an integral part of the cultural experience of the society. But unfortunately, many other societies, including the United States, represent another model. The model that we represent is of exploitation of the land. Colonists came from Europe in the sixteenth and seventeenth centuries, and marched westward, taking everything that could be taken and using it in as short a time frame as could be done with as great a profit to individuals as possible. That's not a very good cultural experience upon which to build a set of ethical values that relates to protecting and maintaining the quality of our environment.

So, in this society, and I suspect in many others, we're going to have to learn. And learning is a hard, tough job. You don't learn by just turning on the T.V. set randomly. You don't learn by just occasionally reading the newspapers. You have to work at it. And one of the key elements of learning is to have good and great teachers. I believe Rachel Carson was a teacher when she wrote *Silent Spring* in 1962. We will need to find new teachers for the 1990s. I think that is one of the things that is important about this kind of conference and these kinds of exchanges. They are really about learning from each other, and sharing experiences, and building the kind of values that will, hopefully, go beyond the regulatory programs and the management programs of today.

Thank you.

CHAPTER 2

CHESAPEAKE BAY AS INTERNATIONAL MODEL

Presentation by
SENATOR CHARLES MATHIAS
Former United States Senator (R-MD)

Thank you very much, Dr. Lynch. Ladies and gentlemen, in coming here to talk a little bit about the Chesapeake Bay as model, I want to avoid the pitfall of trying to give unwanted advice. One of the things I've learned over the years is that voluntary advice is not usually very helpful. I recall a British solicitor who was approached by an old lady who said she had a problem. She described her problem and then he proceeded to tell her what he thought she ought to do. As she was leaving, he said, "That will be twenty Pounds." She asked, "Twenty Pounds, why?" He responded, "Well, that's for my advice" to which her reply was, "But I don't intend to take your advice!" So it saves a lot of time on the part of the speaker and on the part of the listeners if we avoid advice that is not going to be taken.

As far as the Chesapeake Bay is concerned, several years ago I had an indication that there is some interest in the Bay as a source of example of what can be done. I was visited by a very distinguished delegation from Italy. Monica Healy, who is here today, was present at that meeting. The group included representatives of local governments in the northern Adriatic, the area just south of Venice. The Italian officials came to seek our advice and a recounting of the experience we have had in the Chesapeake Bay. The reason was because the conditions in the northern Adriatic were remarkably similar to those that had developed in the Chesapeake Bay, both in the general original ecology and in the kind of industrial problems that had existed in both places.

The basic fact is that wetlands, coasts, oceans, and the atmosphere itself are all part of the great sponge that absorbs in a very indiscriminate way all the good and the bad elements of modern civilization. In the course of absorption, the waters of the world have become the victims of the concentrated by-products of civilization. We have pollution from treated and untreated sewage. This is typical, and is one of the major problems of the Chesapeake Bay. We have industrial waste discharges which were certainly one of the early problems that we confronted in the Chesapeake Bay. Fertilizers and soil run-off are perhaps the greatest unsolved problems in the Chesapeake Bay. Of course, the resulting environmental problems are too big to be addressed by one government alone, because the geographic spread is usually too great. In the case of Chesapeake Bay, Maryland tried to cope with the problems but found it was impossible. The initial reaction was to feud with Virginia. In fact, for many years there was a running feud between Maryland and Virginia over the control of marine resources in the Bay. It wasn't until about fifteen years ago that we began to cooperate with Virginia. And ultimately we obtained cooperation with Pennsylvania which is a source of a lot of water in the Bay. So, this is just one example that you really need to have a kind of cooperation that spreads beyond a single governmental entity.

We also have to deal with natural phenomena. Ocean currents affect the movement of pollutants; therefore, agreements among states and nations about the discharge of pollutants are necessary. We see there is a great deal of interdependence in this environmental world as there is in other aspects of modern life. With this interdependence, there are rights, responsibilities, and obligations to share knowledge and technology. The environmental repercussions from Chernobyl, for example, emphasize the need for this kind of cooperation.

The United States has recognized this responsibility because it has attempted to be a leader in resource protection and environmental quality. Thus the U.S. is undertaking to encourage environmental protection in a number of ways. In various international agreements, environmental questions are asked. I don't think that my satisfaction would provide the environmental answers, but at least, some awareness and sensitivity is being developed.

The United States Coastal Zone Management Act has become a model for countries that are exploring the potential for coastal area management programs. The National Park Service has an International Affairs Division. It reports that over fifty countries are now considering the implementation of coastal resource management programs for the protection of estuaries, coral reefs, beaches, fisheries, and water quality.

Congress now tries to encourage the multilateral lending agencies and the international financial institutions to become involved. It has also passed legislation so that institutions such as the World Bank, the Asian Development Bank, and other multilateral financial institutions can promote sweeping environmental reforms and loan policies. In other words, when a country appeals to one of these institutions for a development loan, it will be asked, "What is the impact of this going to be on the environment?" "What can you do to lessen any adverse impact on the environment?" It is not possible to exaggerate the importance of these initiatives. They certainly are not the complete solutions, but they are steps leading towards the solutions. In a world of very rapid population growth and increasing demands on natural resources, the countries have failed to integrate resource protection and environmental management into their economic development strategy. They may not in fact be able to sustain beyond the very short term the progress that they have attained.

If we think of the world as a global sponge, then its health is particularly critical to the developing countries. Unfortunately, there are some developing countries that are so poor and desperate that they say, "Send us your pollution. We'll take your pollution with your dirtiest industry." Coastal tourism and the export of sea food are the number one foreign exchange earners for many of these developing countries; so in these countries the conservation of estuaries and coast lines is a matter of real survival. Of course, estuaries and coasts are also the site for shipping and for industries that are closely related to marine activities, for port development, mining and urban centers. There is a whole range of commercial activity which, if it is improperly planned and inadequately managed, can lead to disaster and the functional extinction of estuaries and coastal resource systems. We, in the developed world, have the ability and the obligation to help such countries avoid this fate.

The clean-up program for the Chesapeake Bay does provide a case study for all the countries of the world that want to improve coastal and estuary management. The Bay extends across a great many jurisdictions. It is one of the largest and most productive estuaries in the world. The clean-up program serves as an example of balancing development pressures and resources protection. I think it is also breaking new ground in identification and control of non-point source pollution, which is a much bigger problem than we expected when we began the Bay clean-up program, and is a growing problem in estuaries around the world.

Setting this effort in motion was not easy. In the first place, it took seven years of basic research and $27 million from the federal government money to establish a base line against which future water quality trends could be measured.

I would like to give a great deal of credit to Russell Train who was the Administrator of the EPA, and who was very instrumental in the initial days of that basic research effort. The start of this program took the active and concentrated attention of the federal government, the state government, the scientific research community, major universities, industry, the watermen who live closest to the Bay, citizens, and shipping interests who live and work around the Bay -- all concentrating to define the water quality problems. Getting the governments to work together was a very difficult problem. Little by little, as more people understood the importance of the problem and the public interest evolved, they started to work together.

I remember one of the breakthroughs was when Senator John Warner convinced Governor Dalton of Virginia to come and look at the erosion problems on Tangier Island. We all flew there together. When the Governor's plane landed on Tangier Island, I believe that was the first time in 350 years that there had been a cooperative governmental act affecting the Chesapeake Bay by Maryland and Virginia! The first encounter between Maryland and Virginia was the Battle of Bloody Point, where the Virginians contended that Marylanders were squatting on their land because the Virginians had arrived in 1607 and Marylanders did not arrive until 1634. About 1635, the Virginians sailed up the Bay and started the battle. We never really declared peace from that time until Governor Dalton's plane touched down on Tangier Island ten years ago.

Now, ten or twelve years after the inception of the Bay program, we have done a lot towards defining the ecological problems. It looked so easy at the beginning. We looked around Sparrows Point, the great steel plant outside of Baltimore, and we could see a lot of trash floating in the water. We thought, "That's the problem. It's easy. We just have to go out with a few deep nets, and filters, and we have the problem solved." We soon learned that it was a much more complex problem than that. Now, we are beginning to have some understanding of the intricacies and some ability to move toward solutions.

Maryland, Virginia, Pennsylvania, and the District of Columbia have all made very major commitments of money and manpower. One of the outstanding pioneering products of this effort is the critical areas of law, which has been an important instrument in the Bay clean-up program.

To save the great estuaries and the magnificent coasts of the world, nations have to make very broad and ambitious plans. This is what we ultimately have to do in the Chesapeake. Such plans have to include not only the principal waters that are immediately involved but the shores, the tidelines, the upland fringe, and the entering streams. They will have to include agriculture and industry in the urban areas that drain into the estuary.

Regarding the oil pollution that exists in the Chesapeake Bay, we have identified only a fairly small percentage that is the result of marine traffic and of ships either improperly leaking or pumping bilge waters into the Bay. Most of the oil pollution comes from the shore. It comes from some teenager in places as remote as Harper's Ferry, West Virginia, who pulls the plug on his crankcase and lets his oil drain down into the gutter on his street. That oil runs into the Upper Potomac and finally finds its way into the Bay. It is the whole system that must be considered.

It is important to make the experience on the Chesapeake Bay relevant to both industrial and developing countries. I also think that we have to encourage federal agencies to introduce to others the knowledge that has been gained in the Chesapeake and in other estuaries. There has been interesting work done in Long Island Sound, for example. Make that information available to interested countries around the world and transfer that knowledge through such vehicles as the Regional Seas Program of the United Nations. There are vehicles for communication.

A group of eminent managers and scientists from North America, Europe, and Asia have formed a consortium to conduct a major policy-oriented comparative study. The Chesapeake Bay clean-up program is the prototype. This consortium, of course, looks at the policy issues surrounding the Bay clean-up, then at the solutions, and finally at the determination of how to apply these solutions to other estuaries around the world. The Baltic is in desperate trouble now because it has had two major marine disasters in a single season. They have had a major fish kill this summer, and now they are having a mysterious disease that is affecting thousands of seals. The North Sea has to be close behind. The inland Sea of Japan is under terrific population and industrial pressure. The Arabian Gulf, the Gulf of Thailand, the Adriatic as we have already mentioned, the Red Sea -- all of these are on the severely threatened list.

I think there is a two-way street here. As we share our knowledge with other nations, we will learn about useful indigenous solutions that they develop, which we can apply in the Chesapeake and in the other estuaries in this country.

The biggest problem may not be a physical problem or a scientific problem, it may be a psychological problem. There is a tendency to view these great resources as infinite. They have always been there; they will always be there. I remember a former governor of Maryland who just could not envision that there was anything basically wrong with the Chesapeake Bay. He resisted the idea of doing anything about studying or trying to save the Bay because he didn't think it needed to be saved. He thought it could save itself, that it was an infinite resource. That is the kind of complacency that we can't afford. It is that kind of complacency that Jacques Cousteau was addressing when he said, "If the oceans of the earth should die, it would be the final as well as the greatest catastrophe in the troubled story of man and the other animals and plants with whom man shares the planet."

The world's waters must be protected from future abuse. International cooperation can help us all to understand the complex problems we face and help us to meet the global challenge of preserving these important natural resources for future generations. We must be sure that the man-made by-products of civilization don't over-tax our great global sponge, because it's the only sponge we have and it's the only one we will ever have.

CHAPTER 3

U.S. GOVERNMENTAL RESPONSE

Presentation by
SENATOR TERRY SANFORD
Senator from North Carolina

Thank you very much. I am pleased to have an opportunity to speak at this conference because you have been looking around the nation and thinking about the problem of environment directly and almost exclusively for a couple of weeks now, and I am proud of that. I am sure you have had a long and developing interest in the environment and are now trying to gain a more particular focus on the subject.

I think that you are part of the awakening of the public to the fact that the environment is something that can be fouled and that it needs to be protected. We've known this in a remote way all the time. We've known that you have to clean out the house and can't leave the trash in the kitchen unless you want rats and cockroaches. We've gradually learned that you can't foul up the rivers if you want clean drinking water and a place to swim. We didn't want to believe that automobile exhaust could foul the air, but we finally concluded that it can and does. We don't want to take the bottles back to the grocery store because that's too much trouble. It's far better to pay a little more money and throw them away. Now, never mind what happens to them when you throw them away; we hire garbage people to worry about that. Never mind about a stronger plastic bag that is not biodegradable because that's what we want. We don't want the garbage bag to bust on the way to the garbage pail when we don't handle it carefully enough.

The public, generally, hasn't at all been aware of the fact that preserving the environment needs to be a very high priority. We knew we had to have economic development, jobs, and perhaps we were willing to sacrifice these "unimportant things" -- like the environment -- in order to gain that standard of living, or those comforts that somehow we didn't quite comprehend as being detrimental to the environment. In a democracy, and probably in any kind of political system, it takes some outlandish development, some emergency, or some tragedy for us to focus our attention on things that we haven't wanted to look at. It's so easy in an affluent society to find oneself disregarding those little things that pile up. So, there really hasn't been a public awareness that we needed to do anything differently or that we have a problem. Maybe that's our next job -- letting the public know that we do have a problem.

Last night, I happened to be presiding over a meeting, and the procedure used in that meeting was one that is not often followed, but we did it because it involved a fairly important piece of legislation. The legislation was introduced, debated for thirty minutes, and passed, just like that. Soon, it is halfway to being law. The legislation had to do with an environmental concern of considerable importance but with limited scope -- it required the Environmental Protection Agency to track the medical waste dumped in the ocean in the New York area. Well, that was an emergency. As Lowell Wicker pointed out, "We've been killing the whales, spotting up the fish, and ruining the lobsters for a while now, but it wasn't until you messed up our vacation on the beach that you got our attention!"

In any event, whether or not it is law, the environmental groups and the environmental agencies will get the message that Congress is concerned about it. They think that perhaps the agency hasn't been doing a good job. Again, maybe this sign points out our tendency to put the burden off on somebody else. In this case, we put it off on an agency which, incidentally, we haven't funded very well. I am sure they can make the case that one reason they haven't been tracking better and catching the culprits and finding the true source of this particular little environmental problem is that they don't have enough staff and money. That case can be made and perhaps will be made. Even if it's not true, it's a good opportunity for them to increase that budget.

Now, how do we go about it? This past week, Senator Dan Worth of Colorado put in a bill which I was pleased to be one of the co-sponsors of. The bill dealt with the greenhouse effect. We've been hearing about the ozone layer and the greenhouse effect for twenty years to my knowledge, perhaps longer.

I remember John Gardner, when he was in government in the early Johnson days, trying to stir people up concerning this subject and not getting very far. Now, here we are, burning up. We are not only uncomfortable in this heat wave that we have now had for about three years, but we are seeing the crops being destroyed and the price of food going up. So, we began to pay some attention - maybe there is something to this greenhouse effect. Now we are beginning to find an interest in Congress. This is not just something that a bunch of experts have labeled as a problem, but *here it is* -- it's coming home. We feel it in the ocean, on land, in the weather; and it's time to start doing something about it.

I would hope that we can now continue to raise the public's attention to the need for a broad concern for the environment. Last year, we tried to do some things in a small way.

I've been trying to formulate a new approach to economic, social, and political development in Central America, which is moving along very well. We need to help develop those countries. Thanks to Susan Drake and some other people, I have been able to bring together a number of organizations and people to talk about how to develop the countries with limited economic development without destroying their environment. The concept of sustainable development was brought up -- a concept which has been here for us to know about but which we have not yet bothered too much about. However, it applies so directly now to this important part of our hemisphere -- for example, the rain forests. Do we chop down the forests and use those forest lands to raise products? Do we tear up those forests by building high-rises all along them in order to attract tourist dollars? Or do we look to a place where we can start almost from scratch in economic development and lay across that the concept of sustainable development? I hope we can do this. The international commission we created for the development of Central America has worked the concept of sustainable development into its recommendations. We hope we can keep those recommendations there as part of whatever action is taken over the next five, ten, fifteen years, (which is the period it will take, if we're lucky, to get that region on its feet).

Some things can be done for the environment in Washington, in the Senate and in Congress. Maybe it is necessary for the initiative to be taken in Congress, because people are not willingly going to change their habits and extravagances. It's just not our nature to do that. We are going to do whatever is easy, convenient, safe, and whatever makes money. Someone, however, needs to draw the boundary lines -- what can be done and what can't be done if we're not going to destroy our environment. So, your participation, especially those of you who are young and coming along, brings me great encouragement as an indication that we are beginning to give attention to something that we have to give attention to.

I believe the situation is somewhat comparable to the annual deficits. People often say, "What's the deficit? What do I care about the deficit? It piles up on the national debt, but that doesn't affect my payroll -- at least not for the moment." But there it is, building up. The trade deficits are building up, and all of a sudden, those two tigers are going to come out of the forest and eat us up. We don't even think about those tigers being in the forest because we can't see them too clearly. Specifically in our lack of concern for the environment we are cheating the future. We are building problems for our own immediate future because before we can live long enough to die, the problem is going to come around full force -- in our lifetimes. When we run up debt and ruin the environment, we are certainly building problems for the future. We are cheating and betraying the future.

The domestic responsibility for the environment rests with the Energy Committee. The international aspect of whatever we do, environment or most everything else, comes back to the Foreign Relations Committee. Maybe we can make this a number one project this year with the Foreign Relations Committee looking at the global needs and what we can do to help lead other nations into the proper kind of environmental protection actions. Similarly, we should look at what we have to do at home, because we probably are -- like it or not -- the biggest polluters in the world. In the meantime, we have an opportunity to take a more rational and intelligent view of our role in the developing nations and how to go about it. We can have a tremendous influence in encouraging development in a way that shows the kind of concern for the future of the world, the kind of concern for the future of the globe, and the kind of concern for environment that will make substantial difference. Maybe it will make the difference about the survival of the globe in the days to come. So, I hope we can do that.

I heard Senator Dan Worth make the following statement, and it was so surprising that I thought I would check up on it. He said that during the Ice Age, the mean temperature of the globe was only five degrees centigrade lower than it is today. The predictions are that if we don't do something about the greenhouse effect, by the middle of the next century the mean temperature will be five to nine degrees higher than it is now. I would have thought that the Ice Age was much colder. If we go now twice as far as we've come since the Ice Age, you'll have to go up near the North Pole to grow corn. So, I think we can begin to get attention for environmental issues. We can get it by holding hearings, but CNN doesn't normally run hearings unless there is something controversial or unless you're putting somebody in jail.

Thus, these organizations that you belong to, and this program today, are the best way to address the issue.

Our job, right now, is to learn more about what the problems are, but it is also to make certain that everybody understands that this is not just another academic endeavor. This is truly a problem of tremendous magnitude, and one that very well could spell life or death for the whole planet. I thank you for what you are doing.

Presentation by
STEVE SHIMBERG
Minority Counsel
U.S. Senate
Committee on Environment and Public Works

Ira Kaufman suggested that a helpful approach would be to give you a general idea as to what the Environment Committee does in the Senate. The Environment Committee is currently made up of sixteen members of the Senate; and it is one of the eight or nine different Senate committees. The committees have areas of responsibilities dealing with judicial issues, commerce, or interstate commerce issues, and taxes. We, primarily, handle environmental issues. Historically, our main focus has been on environmental issues, but that has started to change. We tend to work mostly on pollution problems.

A large part of the activity of the Committee began in the early 1970s. As Ed Johnson from the EPA pointed out, that period was really the beginning of environmental legislation and environmental activity in this country. It grew out of a recognition, at the federal level, that various states were having difficulty controlling interstate pollution. Although the fifty states that make up the nation are sovereign entities, when you have pollution from one state affecting the other, it is very difficult to control. The federal government found itself stepping in to set minimum standards and to try to control some of that interstate interference.

We've developed the legislation that's on the books now: the Clean Air Act, the Clean Water Act, and the Safe Drinking Water Act. We also have RCRA for control of hazardous waste -- the managing of hazardous waste from the point of generation to the point of disposal -- and we have the Superfund Law which is designed to clean up old hazardous waste sites and dumps that are scattered throughout the country. There are just a lot of different laws on the books. Some overlap and some people would even suggest that, at times, the laws conflict with each other and create confusion among the regulated community.

One of the questions posed in seminars of this type is whether or not the United States' system should be used as a model for the world as some of the developing countries start looking at pollution control. From my experience, I would suggest that the United States, in many respects, is not a good model. Even though we have a great deal of expertise, and have made great progress technologically, the focus on the media by media approach, i.e., first looking at air, then at water, then at land, has really created a problem. In a sense, we're squeezing a balloon and every time we squeeze in one place, we say, "Ok, we won't pollute the air," so the waste ends up going somewhere else. Then we find it's in the water, and we say, "Ok, so now we won't pollute the water." We really have not taken an overall multimedia approach to the problem. And this is an approach that anyone who is starting with "a clean slate" should consider very seriously.

The other reason why I think we are probably not a good model of sustainable development is that as an already heavily developed country, we don't have the same concerns and pressures as developing nations. We don't have the same competition of interests. We can afford, in the U.S., to be a bit more cavalier about the cost we impose upon industry and the sacrifices we make in terms of industrial development. That's obviously a point of major contention in this country, and we receive a lot of criticism from industry on that point. But, I think if we look at the larger picture, we don't have to worry quite as much about questions like, "Does this new law prevent us from feeding our constituents? Does it prevent the harvesting of wood to heat the homes of our constituents?" Obviously, developing countries have to consider such questions much more than we do.

There are several other differences. We are not a parliamentary system of government, and so we don't have to reach the same level of consensus that a parliamentary system does. In my experience, in countries that have a parliamentary system, the relationship between the regulated community, the executive branch that has to do the regulations, and the legislature that creates the requirements, takes place in a much more cooperative fashion. In this country, with the separation of powers, it is more of an adversarial situation. Ed Johnson addressed this point. I don't think that's necessarily all bad. Ours is clearly not an efficient method of government, but it works, and I think the end results are often much more beneficial in terms of environmental protection.

Having focussed a great deal in our Committee on domestic pollution problems, we are now entering a new age. We are just starting to discover the international aspects of pollution -- the global problems. Global pollution problems start out on a regional basis; for example, with acid rain and our pollution of Canada which obviously we have to do something about. Our Committee has been trying, for a number of years, but without much success. Perhaps this year we'll have better luck.

Another issue that we have been dealing with in the Environment Committee has to do with depletion of the stratospheric ozone layer. We were instrumental in pushing our country as well as other countries in the context of the negotiations that resulted in the Montreal Protocol last September. The greenhouse effect and global warming are other issues that we are now giving a great deal of attention to and recognizing that we can't solve these problems alone.

Solving the local pollution problems here at home isn't going to amount to a drop in the bucket if we allow these other global problems to overwhelm us.

In the context of this international work, I am discovering that a great deal of tension exists between the developed and the developing nations. Part of it is probably due to the difference in sophistication regarding scientific understanding. A great deal of the tension, however, seems to come from a perception on the part of some of the lesser developed countries -- that there is some kind of a conspiracy among the industrialized nations to maintain the status quo, in terms of the relative power of countries. That is obviously a problem that we are all going to have to overcome. If we allow the use of coal and the emissions of carbon dioxide to continue at the rate they are today, we are all going to be in real trouble due to the greenhouse effect and global warming.

One of the areas we have identified where we can begin to make a difference internationally by acting on our own, is the area of activities that the United States undertakes which actually have detrimental effects in foreign countries. The funding of projects that are destroying tropical rain forests, river systems, and the like, has led to the introduction of legislation by our members in the Senate, concerning multilateral development banks to require increased consideration of environmental impacts, much more than they have in the past. This has also led to legislation dealing with the "debt for nature" swaps which have a lot of tax implications for various banks in this country.

As we get into these other areas, we find that the Environment Committee is no longer the sole receptacle of environmental legislation and we have to work much more closely with the other committees. You are going to hear from Senator Sanford later today. He is on the Foreign Relations Committee and very active with the multilateral development banks, with the AID programs, and the like. Similarly, the debt swap programs have to go through the Finance Committee which deals with tax issues.

So we are, as well as the rest of the world, in a state of transition on these issues, and we are still discovering our way.

Presentation by
MARK REITER
Professional Staff Member
U.S. Senate
Committee on Environment and Public Works

I started my professional life as a political scientist. I think that particularly for those international visitors who are here today, it might be useful to elaborate on some of the issues raised earlier by Steve Shimberg. For example, how the Congress operates and why we are sitting here today speaking to you from the perspective of the Committee for which Steve and I work -- the Senate Committee on Environment and Public Works.

As Steve said, our Committee is made up of sixteen members: nine of them are Democrats, seven are Republicans. You will find that in the Senate, members often choose the committees on which they will serve. This is done either when they first come to the Senate or at some later date, based on their own personal concerns or the concerns of the people in the states which they represent. The members, therefore, bring with them some sense as to those issues which are important to the citizens whom they represent. Certainly, this is true in our Committee.

Those issues arise and come to the attention of the Committee members in a variety of different ways. People like Steve and I, and the staff here in the Senate pick up the phone one day and hear from somebody in great distress: the children are sick, there is an odor, or there is something else wrong. They may call our Committee or the Health Department in their local community or their state. Sometimes a person in some official capacity will find a problem. For example, a scientist somewhere will discover something, very much in the same way scientists discover things all over the world. At some point, that discovery will be presented to us. It will come to us either through the public, through a scientist, through a member of the House or the Senate, through an environmental group, through a company within an industry, through an industry association, or through a government agency.

When an issue takes on a proportion that is usually beyond the boundary of a single state, the Congress may then become involved. When it does, the committee process begins to generate the work of the Congress. The staff of these committees -- people like Steve and I -- begin to develop an expertise in an area by studying the various data available, and discussing the data with the senators for whom we work. These discussions entail what these issues are and how they affect the health and the environment of the people of this country. We then begin to think in terms of whether the legislation is needed. Generally, legislation that comes out of the Congress, particularly in the environmental area, will be national in scope.

A real shift in the way our Committee began to look at environmental protection occurred in the early 1970s. That shift was away from a health related approach to an environmental approach without regard to health effects. Our Committee pioneered the concept of uniform technological standards in the

1972 amendments to the Federal Water Pollution Control Act. This meant that regardless of the level of contamination, whether we were dealing with pristine water or with heavily polluted water, there was a national standard set across this country which required a minimum level of technology. Many people, in both cities and companies that were affected by this legislation, complained that this approach caused some water bodies to be overtreated. It should be noted that where the waters were not going to be cleaned up enough through the minimum standards, the law required that more stringent controls be added on top of the minimum technology standards.

Part of the reason why Congress adopted the technological approach was economic. One thing that Congress was trying to avoid by setting uniform technology standards was what we call "pollution shopping." This is where a company could say for example, "Well, you know the pollution standards in Oklahoma aren't so stringent, so the costs of production there will be lower. Let's move our plant from Pennsylvania to Oklahoma." The people of Pennsylvania and the community which lost the plant would be the big losers. What Congress has tried to do is to avoid such situations. Congress has said that throughout this country, companies can not "pollution shop" -- i.e., find one state with less stringent federal standards than another state.

That lesson has been very productive in this country. What we find is that a number of states have actually implemented legislation that is more stringent than the minimum federal standards. Other states have implemented the minimal federal standards. We have avoided the wholesale departure of some industries from states where the cost of living and the cost of goods are higher to other states where costs are less. Industry then, is fought in ways other than through the environmental protection laws of any given state.

As a committee we address a problem using this approach: we hear that there is a problem; we consider it; we try to think through what it is we're doing; and then, we legislate as necessary. Sometimes, in cooperation with other branches of the government, and sometimes without such cooperation, a law is enacted. In 1987, after numerous years of trying, our Committee and our sister committee in the House of Representatives, enacted Clean Water Act amendments over the President's veto. Among other modifications to the existing Clean Water Act, we believed these amendments would strengthen the toxic provisions of our water pollution control laws. The argument against the bill developed over money more than over anything else. The Reagan Administration felt that the bill we were proposing would be too costly; but the Congress felt otherwise. Even though the president vetoed the bill, the Congress enacted it over his veto. This is the extreme example of congressional/executive branch tension.

Let me provide another more positive example. For a number of years, the Congress has been trying to reauthorize the Superfund Law. Superfund is a fund whose money is collected from the producers of what could potentially become hazardous materials. These materials have been disposed of on the land and in water. Sites containing these materials have appeared all over this country and have created major health and/or environmental problems in the areas surrounding the contamination. Ground water, air, and soils have been contaminated in local areas and their exposure to humans and to the food chain may have been significant.

In 1980, the United States decided to address what has become a massive problem. In the first five years, Congress provided $1.6 billion, but soon discovered that that sum was far from sufficient to address the problem and clean up the contaminated sites. In 1986, $8.5 billion was designated for collection, again to address this problem. (Today, we are finding, just a couple of years later, that this sum, too, is insufficient compared to the problem we now face.) In a very lengthy series of negotiations between the House, the Senate, and the Administration, the Congress ended up with legislation that the President -- although he wasn't pleased with it -- eventually signed in October 1986. The fact is that no one was really pleased with the compromise. Some people argue that, perhaps the best position to be in is one in which nobody is happy but everybody is willing to say, "Ok, let's do it." In this case nobody lost, but everybody won less than they had hoped to win. Certainly, we all won more than we lost. This is an example of how the dynamic tension between the Congress and the executive branch often operates in a system where we have a congress whose power is separate from that of the executive branch.

This is a concept that I would like to address for a moment. In my travels for the Committee, and in my own personal travels abroad, what I have found most interesting is a question that I'm often asked over lunch or in an informal moment while looking at sites or air monitoring systems or the like. People often ask, "Why does the Congress have power? Why do you -- this institution -- have power?" The first time it was asked, I really had to stop and think about how to answer that question. Later, I decided that the answer was not very difficult at all, but it might be difficult for those who don't understand our system of government. This might help those here today from other countries to think through how interests in environmental issues are generated.

Congress is a separate and co-equal branch of government. Its role, obviously, is to legislate. There is no Clean Water Act, or Clean Air Act, or Superfund Law for the Environmental Protection Agency to implement if the Congress does not pass legislation. However, once the legislation is passed, Congress has the responsibility to monitor, or to conduct "oversight." Oversight is a means to make certain that the laws are being implemented by the government in the way the Congress intended them to be. It is in this realm that publicly the Congress observes the implementation of laws and comments on them. Consequently, the government (the executive branch) is put somewhat at a disadvantage. There are 535 members of Congress, each with their local newspapers and radio stations; and there are also national newspapers, radio stations, and trade newspapers. It isn't very difficult for any of these members of the Senate and House to address through media the problems they see in the implementation of our environmental laws.

Regardless of which party is in power, the government never wants to "look bad" and it tends to respond to issues addressed through the media. Very often, we find that not only do we talk directly to the agency staff, but we also speak to them through the media, which sometimes places great pressure on the government to respond. Although tension exists, it must be remembered that senators and congressmen serve people. When people have problems, they often speak to their senators and the congressmen *before* they speak to the government agencies involved -- and often, senators and congressmen respond to their people. When the public comes to the Congress with its issues, we bring those issues to the attention of an agency. This may take a variety of different forms including one or all of the following: private discussions, a bill, public hearings, the media. Government personnel may go to a senator's or a congressman's office for a discussion about the matter. If that fails, hearings may occur which the press attends. Committee oversight may commence, fact gathering may occur, and the facts may be published through the media. This tension tends to bring issues into some balance.

So, to summarize the role the Congress plays is to listen, to study, enact laws, to establish oversight, and to comment. These few words give rise to a broad and complicated role for the Congress, a role which is the basis of the Congress' independent power in the American system of government. To paraphrase a post student of American government, "The American system of government is often wasteful of manpower and money. But it works, it works, and sometimes with beauty."

For those of you who are not familiar with the system, I hope that in some small way, this talk gives you some idea as to how the Congress operates as an institution.

Presentation by
CHARLES FOX
Environmental Policy Institute

My perspective is a unique one on this panel. I guess it might help the introduction to say what I do for a living, and to explain what the role of an environmental group is in this country. As Steve Shimberg said, my job is to help raise issues and to give citizens a forum to express their views on problems they face in their communities. It is intended to help people like Steve Shimberg and Mark Reiter craft solutions to these problems, come up with legislative remedies, or to focus oversight hearings to try to address these issues. In the final analysis, my job is sometimes to help them get legislation through, which is what we term in this country "old-fashioned" lobbying. It means that you must get a majority of the votes to get something passed, and there are all kinds of mechanisms you can use to get those votes. Ultimately, it is a matter of really understanding people's concerns around the country and finding avenues for them to express those concerns.

I should say that working with people like Mark and Steve is very interesting, and the Senate Environment Committee is really the environmental champion in the U.S. Congress. It is the Committee that is going to become the leading environmentalist in the Congress. It is very different, for example, from a committee on the House of Representatives side, such as the Energy and Commerce Committee, which has the unique challenge of trying to balance both environmental and economic interests within the same committee. In fact, the Clean Air Act that you heard Steve mention, has been an example of that kind of balancing; it is hard to get it out of the Energy and Commerce Committee. This reminds me of the work I did in the Maryland state legislature for about three years when I had to deal with a committee called the Committee on Economic and Environmental Affairs. If you have to go to a committee that has a mandate to both economic and environmental affairs, you can appreciate the difficulty of getting any legislation out of it. Steve Shimberg, Mark Reiter and their Committee are really the environmental champions in the Congress. It is nice to have their perspective here today.

I would like to talk about a relatively recent approach towards environmental management by the U.S. government. It is a unique approach in many respects. It focusses on ecosystems; and is not discussed in the media like issues of air, land, and water which Steve talked about. It offers new roles for federal and state governments and it is important from my standpoint because it broadens citizen's participation in the development of programs and policies. This new attempt is exemplified in the regional approach towards the Chesapeake Bay which you have heard about. But Chesapeake Bay, in many ways, was an offshoot of our nation's attempt to clean up the Great Lakes in the mid 1970s. This approach is being tried right now in coastal areas such as Puget Sound in the State of Washington, New York, New Jersey Harbor, and near Gansit Bay in Rhode Island. There is even now an attempt to start up such a program in the Gulf of Mexico. This approach tries to transcend the kind of traditional top down regulatory approach of the Clean Air Act or the Clean Water Act where the federal government sets up its minimum standards. It does not replace, by any means, the need and the value of these regulatory programs.

Rather, its intention is to create a forum to tackle some other issues that might not be addressed in regulatory forums. Some of these issues are land use controls or wetlands protection, or allocation of resources among different user groups, i.e., fishermen. So in one respect, the new regional approaches are trying to address these kinds of issues that are not really conducive to the regulatory approach. They are also attempting to address what I call the "cumulative impact issues" that we face in our society.

This is where you enter into the very soft field of science and the adequacy of science to make policy decisions, such as, "How much toxicity can our Chesapeake Bay stand?" or "How much acid rain can our air and trees stand?" By creating these regional forums, you can get the political leadership to sit down and make tough decisions based on the best science it has available, which might be for example beyond the regulatory standards that the federal government might set.

My experience is in coastal protection. Some of you might have seen the covers of *Time* and *Newsweek*, our two major popular magazines here, which indicate there is little doubt that coastal crisis has emerged in this country. I think it is fair to say that the problems of these cumulative impacts extend way beyond coasts -- they include things like the greenhouse effect, ozone depletion, indoor air pollution, overdevelopment in sensitive coastal areas, and even solid waste management. All of these are the kind of emerging issues that we have to start addressing from a cumulative impact standpoint in our country.

Steve Shimberg is absolutely correct to refer to the U.S. as a model. I think it is fair to say that we, in this country, still have a long way to go in terms of environmental protection. The focus of this new strategy has to be one of prevention. We are not good at this in the United States. We can not afford the billions that a Superfund program costs to clean up the mess that we have made -- the superfund sites. We must find a way to prevent these sites in the first place which means finding a way to prevent the generation of toxic waste at its source. A similar case exists for the solid waste problem.

The ramifications of global warming and ozone depletion suggest that we have a long way to go in the areas of energy efficiency. As an environmentalist, I think it is very important that we launch an all-out war on energy inefficiency and restructure our society to prevent waste. We have stumbling blocks in this country with the way our environmental programs have emerged with the different focus on clean air, clean water, and RCRA as it is called, which is the toxic waste law. We really have to find a way of bringing these things together. I would argue that the regional approaches, however, offer the unique opportunity to address this cumulative impact issue perhaps better than anything we have available in the country.

I would like to talk a little more about the Chesapeake Bay and I know you have all heard a lot about it. We also have two very fine speakers coming up that I would like not to steal the thunder from -- Senator Mathias and Bill Eichbaum, both of whom are, I think fair to say, the fathers of the Chesapeake clean-up effort. The Chesapeake effort was born in 1977 with Senator Mathias. The good Senator has passed legislation to start a study of the Chesapeake Bay. This is the way that many of our initiatives in this country start -- a study.

This study was different from the onset. It involved state and federal agencies throughout the entire process, and what happened in many ways, was a miracle. After seven years, when the study was completed, we had consensus from the federal and the state government. Ultimately, this consensus was communicated to the elected officials on the priority of the problems of the Chesapeake Bay. That had never been accomplished before, although studies on the Chesapeake go back decades. You can even read some books about the first environmental laws on the Chesapeake in the 1700s. However, this one was different. It involved all the parties that would ultimately have to make the decisions in the process and consensus was finally reached. With this consensus, under Bill Eichbaum's leadership, comprehensive new programs were established affecting the range of problems on the Chesapeake. They included nonpoint source pollution, agricultural run-off for farmland, land use in sensitive shoreline areas, and some new initiatives on point source control. At the state level, these comprehensive packages of initiatives, plus new funding which is so important in these programs, were established.

Today, there is the new Chesapeake Bay Agreement which everybody talks about. In my opinion, the disagreement lies in whether the Bay would be saved or lost; and I don't think that it is overstating the situation. This is an example of the unique federal-state partnership. I would argue that it really underscores how much more leadership we need from the federal government, not only on the Chesapeake but around the country.

The Agreement itself was born in 1986 by none other than Senator Mathias and Lee Thomas, who is the head of the EPA. It was created at Senator Mathias's last oversight hearing in the Senate. Since then, this Agreement has become the chief vehicle for the whole Bay cleanup. Certainly with all the complications on the Bay area that you have heard about in recent weeks, some would argue that it is a very complicated process. I think I can sum it up in three rounds:

Round one was the Bay Agreement itself; putting the governors together in a small room and having them put their "John Hancocks" on a commitment -- specific commitments as to where the Bay cleanup should go.

Round two just ended in July. It was the first round of deadlines in the Chesapeake Bay Agreement. This round, in my mind, was the easy one.

Round three consists of deadlines that are coming up in December and they will be the difficult ones. Nevertheless, I don't mean to belittle in any way, shape, or form what was accomplished in round two; it truly is monumental.

The state government is committed to this work. Ultimately, hundreds of millions of dollars will be spent to remove nitrogen from sewage treatment plants, which is an area where science today is still not very advanced. Round three is where we are talking about not just what the public sector can do in the form of appropriations but affecting the private sector. In Round three, we have to come up with strategies to deal with toxins in the Chesapeake. We have to come up with strategies to control development along the Chesapeake and to protect wetlands in the Bay area. This is the round where we will find out whether the business community and the political leadership will succeed or fail when they get together to work on the Chesapeake. It will not be over by December. By then, I hope, we will have a specific course of action from an environmentalist standpoint. The Chesapeake Bay cleanup is something that will be with us all of our lives and we are coming to realize that.

Has the Bay cleanup -- this model that you have all heard about -- been successful? Obviously it is too soon to tell. But, I think it does suggest the the success or failure of this unique federal-state partnership. I think, it is fair to argue that Chesapeake Bay initiatives have been largely the result of the state government. There have been two notable exceptions to the federal government coming in and acting in a leadership role. One was the agreement itself, that was the federal initiative suggesting to the states that they go ahead and do it. The other was on a nutrient reduction which was this pledge to spend hundreds of millions of dollars to reduce nutrients. The federal government took a leadership role there; drew a line in the sand, so to speak, and said to the states, "Hey, why don't you consider doing a 40% reduction in nutrients?" The states obliged and came up with very aggressive plans to achieve that. But other than that, the federal government has not done much.

I would argue this is where we now need the leadership in a big way. And this is the challenge that remains ahead on the Chesapeake. It has been one of, in many ways, the least common denominator approach to the environmental management. It means that you put these peopel in a small room and whatever the least common denominator is, that's what you go with.

As an environmentalist, we always want more and we are never satisfied. So I will conclude that the regional approach on the Chesapeake offers, in my mind, a pilot program for us. We've learned what the issues are, we've learned too what the federal government has to do; but if we want to solve, ultimately, these problems of coastal degradation around the country, ozone depletion, greenhouse, we know now what we've got to do. And it's a range of programs to reduce the toxics, to improve our efficiency and to really get a more integrative approach to environmental management.

Thank you.

CHAPTER 4

BILATERAL AND MULTILATERAL RESPONSE

Presentation by
ALEX ECHOLS
Senior Legislative Assistant
U.S. Senate
Committee on Environment and Public Works

What I am going to describe today is a case study of some tremendous environmental failures, the beginnings, the successes, and some challenges that still lie before us.

Most of what I am going to talk about today deals with the appropriation process. Senator Sanford was just talking about his authorizing committee. The distinction between the two is as follows: authorizing committees are committees that write basic laws that guide U.S. policies. They are the ones that ask, "What is the direction we should be going in and how do we get there?" They have, generally, a longer time perspective than individual appropriation bills. An authorization bill for foreign assistance, for example, may cover four or five years. The appropriation process, on the other hand, is an annual process. It is a process that controls the purse strings and says, "If you want some money, here's what we are going to use it for."

I am going to talk about problems that became apparent to the Appropriations Committee, the beginnings of actions, and where we are today.

I work for Senator Bob Kasten of Wisconsin. In 1982, Senator Kasten was the Chairman of the Foreign Operations Sub-Committee to the Appropriations Committee. That is the Committee that oversees all U.S. foreign assistance programs. Senator Inouye, at that time, was the ranking minority member and the two worked very closely together. The majority and their roles in the Senate have now switched, but there is still very much a tandem bipartisan effort.

The case study I will talk particularly about is the need for environmental reform of the multilateral development banks. They make up about a third of U.S. foreign assistance funding which is non-military related. So, about 30% of the money that we give for development assistance does not run through AID or existing U.S. programs. The reason we turn the money over to multilateral institutions is that they can leverage and bring extra funds to bear so there can be a more participatory process.

Back in 1983, the "Who's Who" of the world environment met, wrote to Senator Kasten, and brought to his attention the problem going on in Brazil. That is the project that I am sure you have heard about and will hear some more about today and tomorrow, and probably in the future in the newspapers. It is the Poloroneste Project. In one sense, that's old news. The problems that that project illustrates are the very problems we are dealing with five years later, today.

The World Bank is the largest of the multilateral development banks. There are four multilateral banks: the World Bank, headquartered here in Washington, D.C.; the Inter-American Development Bank, (also in Washington, D.C.) which works primarily on this hemisphere; the Asian Development Bank,

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(headquartered in the Philippines) which deals with the Pacific Rim and Asian issues; and the African Development Bank, (headquartered in the Ivory Coast) which works primarily with African issues. The U.S. is a participant in each of these banks; it controls none of them. Its voting participation is based on the percentage we contribute to the banks. In the case of the World Bank, we control about 20-25% of the voting block. So, the United States can not unilaterally tell the World Bank what to do.

This is a photograph taken, I believe, from the last successful space shuttle. It is of the Brazilian rain forest. You can see here a large area where smoke is coming out. Those are not clouds; those are the forests going up in smoke. That gives you an idea of the scale of the problem we are talking about. Prior to the taking of this photograph, the most prominent thing you could see from this deep in space with the naked eye, I understand, was the Great Wall of China. This is not the case anymore. This is one instant in space, but this process goes on year-round and it is heaviest in the dry season. That gives you an idea of the scale of devastation that is going on. This is the Poloroneste Project. It was a development assistance project intended to help people in Brazil opening up a new frontier. The concept was to take people from a crowded area with severe problems, and move them into a land that did not have people. Conceptually, it was a great idea. The problem came in the implementation. Before the project was implemented, there was an assessment of whether this area could support the kind of development that was being considered. The internal reviews and the consultants that went down and looked at the project came back and reported to the Bank: "*No*. The kind of agriculture that we are talking about moving to this area can not be sustained on the soils that exist there. Sure, there are some isolated areas with fertile lands. But in large part, the proposed types of agriculture can not be sustained." Nevertheless, almost half a billion dollars went into this project. The result was that millions of acres were deforested -- an area about the size of Wisconsin. Thousands of people were stricken with a very resistant strain of malaria for which there is no cure. Worst of all, the environment and economic opportunities were squandered. Political and social systems were destabilized because people were moved into an area where the resources were consumed. They were left with thousands of destitute people often sick and with no means to get back into other areas to support themselves. In supporting this project, we displaced a significant portion of one of the richest, most diverse ecosystems in the world. We also displaced the people who were making a living off the area in a sustainable manner.

The real tragedy of this story is that this project is not unique. Senator Kasten began holding hearings on the subject in 1982 and 1983. The more he looked into it, the more he found that similar problems existed around the world. In the province right next door to this in Brazil, there is a proposal to continue the same road. That project has now been slightly modified to accommodate several environmental issues. The World Bank eventually cut off funding for that project; but the forest was gone, the people impoverished, the rivers gone, and the soil eroded. We are not going to be able to put it back in our life time, or our grandchildren's life time.

The Foreign Operations Committee began changing U.S. laws to say, "We won't support and tolerate this squandering of environmental, human, and financial resources." As I mentioned, the U.S. can not unilaterally control the banks. We made extensive changes in our domestic lending programs, those we can control. Congress can say that funds shall not be used for X. The federal government, then, will cancel the money for those areas.

We began working with the Bank, with the environmental community, with people like Joan Martin-Brown to try to get these decision policies that allow this project to go forth; even though there was very good evidence before hand that it would not work. But we changed the U.S. law.

You see here last year's continuing resolution. Some of you may have heard the president refer to this as the one piece of legislation that takes a month to read and nobody can understand. Contained in it are last year's revisions and foreign operations provisions required by the Environmental Protection Agency. It is now law: that environmental conditions be considered and protected as a component of lending. The U.S. executive directors to each of the multilateral banks are directed to call for environmental protection as part of the decision-making process for all loans. There are fifteen very specific requirements that have been changed, but this is just a step. We now have seen the U.S. vote against two projects because of environmental provisions; those projects were passed anyway. This is not a problem the U.S. can solve by itself.

The United States has now established the "Early Warning System," which is a process where the U.S. makes a very simple preliminary assessment of potential bank projects to see whether or not they are environmentally sustainable before the boards make decisions on funding them. The U.S. executive director must consider those recommendations in shaping his vote. For example, the Early Warning System says, "This area will be an environmental catastrophe, by law, and the U.S. executive director can not vote to support that project." Furthermore, we changed this year's appropriations bill to require that such information be shared with other sponsoring as well as borrowing nations.

On May 5th of last year, the President of the World Bank, Barber Conable, made an historic speech. In that speech, he called for extensive reforms in environmental priorities and decision-making processes at the Bank. His speech is very closely modeled on the kinds of reforms called for by the Appropriations Committee. That structure is very similar. He took, at that time, a very bold step. The World Bank is a huge institution with thousands of employees. Not very many people know much about it, and it is not specifically accountable to anyone, except ambiguously the people of the world. There are member nations, but nobody can unilaterally say, "You will change this institution to do this." It is a process of negotiation, of coercion, of sitting down and working out new priorities. President Conable has endorsed those priorities and he is about halfway there in implementing them. It is truly a remarkable feature for an institution that size.

What I would like you to really think about is that the job is not done yet. The World Bank is part of the picture. They are about halfway to getting a very strong set of environmental criteria up and running in all of their decision making. They have made some tremendous progress, but there is still a long way to go. The other multilateral banks have not come this far. The Inter-American Development Bank was singled out last year for special criticisms by the Foreign Operations Committee. It now has a new president, Enrique Iglesias. He has made environmental protection the top priority for his new administration. Similar progress has been made at the other banks, but no one is there yet.

The next couple of days, while you are pursuing this theme, I hope that you will ask tough questions. Find out how much of what people say they are going to do is rhetoric and how much is really done. Find out how the decision-making process has been changed. Find out what kind of projects are coming forth today versus the kind of projects that were coming forth two, three, or five years ago.

This is a battle that we can win; the battle that Senator Kasten and the Appropriations Committee is committed to winning. It is a battle we have to win. We are in a race against time. The world that we are creating is not a world that belongs to the U.S. Senate, to the Appropriations Committee, to my boss, or to the World Bank -- it's a world that belongs to us. We really need your commitment and support to request this here, when you go home, and when you travel around the world.

Thank you very much.

Presentation by
THE HONORABLE CLAUDINE SCHNEIDER
Congresswoman from Rhode Island

Good afternoon, everyone. I am delighted to be with all of you and I must admit you have already heard from many of the best and brightest.

I was asked to talk a little bit about women in development. There are 2.5 billion women in the world, speaking 2,976 different languages, living in countries where the average annual income ranges from under $200 to $3,000 per capita. Women represent half of the world's population, yet they earn 10% of the world's income. They own but 1% of the world's property, and 600 million of the 800 million illiterate people on the earth happen to be women. Now, if that in itself doesn't tell us very clearly what our agenda must be, how we must organize, strategize, and mobilize in order to move those mountains that we are choosing to move, then I can't say anything else.

I think that every one in this room knows that knowledge is power. If we take the knowledge of one another and of our environment, we will be more successful in bringing about the kinds of positive changes that all of you are very dedicated to create. When it comes to women, in so far as education is concerned, there was a statement made in 1984 by the Pan American Health Organization that said, "There is no greater threat to women's health and to family health than ignorance, and the best remedy for that is education."

Ignorance was, and still is, a factor in the subservience of women. From their earliest years, women tend to be kept in ignorance of schooling possibilities, and later, they are kept in ignorance of their matrimonial, social, and legal rights. Information is the only guarantee of individual freedom. According to UNESCO, in 1985, there were about 300 million more girls that were enrolled in the world's schools and universities than in 1950 -- and the girls' enrollment has quadrupled during this thirty-five year period, rising from 95 million to 390 million. So we can say yes, there is some progress worldwide. In developing countries, about 60% of the girls ages five to nineteen are not in school at all; the low literacy rates of women have a common denominator in poverty. At least 60% of the 500 million women who are unable to read and write live in countries where the average per capita income is below $300. It's very interesting to have the opportunity to visit a developing country, to meet with the women who are anxious to improve their lot in life, and to understand that their primary goal is education.

Last year, I learned that 60% to 80% of all of the agriculture that is done in Africa is done by women. Yet women do not have access to U.S. agricultural extension programs. Programs of the Agency for International Development, for the most part, are not open to women. The reason is that, in order to apply for those AID monies, either you have to be able to read and write, or you have to be able to have credit. Women can not have credit in many countries because they do not own land and so it is a vicious cycle whereby women are essentially equivalent to the beasts of burden.

Fortunately, I introduced an amendment to the Foreign Aid Bill which will require that AID earmark some of those monies to be distributed proportionately among those people who are practicing agriculture. I am hopeful now that if we can just move this bill through the Senate, we will be successful in at least entitling women to an option for education and for opportunity.

Education is critically important in so far as the agricultural extension service is concerned. For the most part, throughout Africa women are the ones responsible for gathering the fire wood, cooking the food, and providing heat. As they go out to collect the wood, they are cutting down trees and not replacing them. So essentially, women hold some of the responsibility for the deforestation, the erosion, and the ultimate desertification. They just do not have the knowledge that it is necessary to replenish that part of the earth which they are harvesting.

It is also very much my opinion that not only must we do more on the grassroots level to empower women and enable them to play strategic roles in bringing about positive changes in our environment, but it is also critical that we have women in the highest decision-making places throughout the world. Right now, there are only twenty-four women in the U.S. Congress and two in the Senate. There are very few women in some of the various administrative positions that will have a major impact on the global environment. Regrettably, the same holds true for practically every developed and developing nation throughout the world.

I happen to believe that women and men are like the left and the right hand -- that you can't get a job done well unless you use both of them. All too often, it is a problem with women because we have taken upon ourselves this cloak that society has endorsed. Often we feel, "Well, I'm not up to the job," or "It's all right for me to be vice president but I certainly wouldn't promote myself for president."

I think that it is partially a mind set that women must move out of in order to understand that we were all created equal and given an equal responsibility to give back to the earth the goodness that this earth has given us. If we do not live up to that responsibility, we ourselves, will be the ones who will have to answer for it. We can't say, "Well, that guy wouldn't let me advance these policies," or "That male-dominated commission wouldn't permit my ideas to go through." We can not accept that kind of failure, because there is nothing grander than the responsibility that we have -- except perhaps for the challenge that we have. And that challenge is one that can be referred to as a ticking time bomb.

We have all focussed on the cataclysmic situation in the Mediterranean. Many, many of you have been responsible for improvements in the pollution in that area. Many of us are now turning our eyes to ocean pollution. Those of us on the east coast of the United States are finding all kinds of obnoxious things coming up on the beaches. Now, suddenly, as all of you are gathered here in Washington, D.C. trying to bear up under this tremendous heat, perhaps we are getting a little hint concerning the single most important environmental challenge that this world will ever face -- Global Warming. It's pretty hot outside right now, but I think that this is just a flavor of the things to come. We recognize that this is not only one of the most cataclysmic challenges that we face, but probably one of the few trends that is irreversible. We also recognize the interconnectedness between the earth's atmosphere and our oceans -- as the temperature is heating up, and as desertification is taking place, the solar radiation is reverberating, thereby melting polar ice caps and causing the sea level to rise. Venice, for example, has problems already. At the same time, we are cutting down tropical rain forests the size of California every two years. Rain forests happen to be the lungs of this earth. They are our scrubber system to scrub out some of the many chemicals and pollutants that we are currently emitting into the air. Consequently, we recognize very quickly that whether we are polluting the Mediterranean or cutting down part of the Amazon tropical rain forest, we are all allowing the continuation of a global problem and a global challenge.

Because of the interconnectedness of our environmental systems, suddenly we, the humans that inhabit this earth, are recognizing the interconnectedness of our many nations. Finally, we are recognizing it. When you look at the globe -- the photograph that was taken from outer space of the earth -- you don't see any dividing lines, you don't see any separations of countries. We are all one people and we are all one earth. The women, the men, all of us must contribute absolutely every bit of energy that we have to bringing about positive change for the future because in the end there are no good excuses.

I commend each and every one of you for the contribution that you have made, and are currently making. More importantly, I commend you for the magnificent positive changes that you will make in the next couple of weeks, the next couple of months, and the next couple of years. Now, I believe, there is a collective consciousness that is starting to re-energize, and we are finally recognizing that we better hurry up.

And so as I am running fast, at double speed, I hope that I will be seeing many of you along the way helping me keep my pace; and I'll be helping you keep yours.

Thank you very much.

Presentation by
MOLLY KUX
Environmental Coordinator, AME/PD
Office of Forestry, Environment and Natural Resources
U.S. Agency for International Development

Thank you for having me here this afternoon. I have heard a lot about this group from my colleague Stephen Lintner, who used to work in the Bureau for Asia and the Near East of the Agency for International Development and now is at the World Bank, and whom, I gather you will be seeing tomorrow.

I want to give you a little bit of explanation about AID, the way it works, the way we set up our environmental policy, and a little bit about our programs. Then I'll be glad to answer any questions that you have. The United States Agency for International Development is an unusual organization. We have overseas missions in over sixty countries, with staff in all those countries. So we are very decentralized. Our budget is also very decentralized. It is assigned to countries in part by Congress. It is also compartmentalized into different accounts; we have accounts for agriculture, health, population, and human resources. So, it is a rather complicated organization. We also have two different kinds of monies: one is economic support funds, and the other is development assistance. The development assistance is the kind of work that we do with poorer countries, and that assistance is really in rural development. Unlike the World Bank, we tend to work -- except in a few countries -- on rural development and agricultural problems.

The Agency had a very tiny environmental program back in the early 1970s after the Stockholm Conference on the Human Environment. It has blossomed from perhaps one or two people and a few million dollars to an annual level now of approximately $120 million. The amount goes up and down, but it stays in that general range. The staff has grown to about forty people. So, there has been a gradual and substantial increase in the focus that the Agency has taken in this area. The initial impetus for that growth was the interest of the U.S. public and the environmental groups.

In 1975, AID was sued by five environmental groups for failing to have adequate environmental procedures under the National Environmental Policy Act, (which is part of our national legislation) and for failing under that legislation to prepare an environmental impact statement on our use and provision of pesticides to developing countries. As a result of that lawsuit, the Agency drafted environmental regulations, prepared the environmental impact statement, changed its policies drastically, and had to hire professionals to carry out those policies. So from 1976-78 to the present, there has been a slowly growing program based on the fact that we had professionals on the staff who could interest the rest of the Agency and instigate activities in this area. Without those people, I don't think our program would have expanded the way it did.

The environmental policy of AID has three or four main requirements:

1. that all of our projects are reviewed for environmental soundness;
2. that we help the countries that we work with to build their own capacity to solve their own environmental problems;
3. that we fund programs which address environmental and natural resources degradation or management; and
4. that we cooperate with the other members of the donor community -- both bilateral and multilateral donors -- and especially those that are easy to work with here in Washington, such as the World Bank and the Inter-American Development Bank.

The kinds of activities that we support, by and large, vary from country to country depending upon the problems and issues in those countries. One of the ways that we have worked at finding out what those problems and issues are is to prepare what we call "Country Environmental Profiles." These are rather like "State of The Environment Reports" or "Annual Environmental Reports" that the United States puts out. The basic reason for these reports is to pull together information on the status of the natural resources in the countries in which we work, to figure out what the problems are, and then to try to work with the governments and nongovernmental organizations in those countries to develop programs that address those problems. Prior to the creation of these profiles, this kind of information had never been put together before. Creating them was a process that was rather hard in many countries, but it was our feeling that we had to do the best that we could. In many cases, we worked very closely with and actually had organizations in the countries, either governmental or nongovernmental organizations, pull that information together and do the analysis. As we learned, this became a very good institution-building process for the country itself. In many cases, the organizations that worked with us went on and increased that kind of work, both for their own national governments and for donor organizations.

The second action that we support is working with nongovernmental organizations on trying to build the public support and ability to affect policy in their own countries so that they can be aware what the issues are, work on national policies, make changes in national legislation, or create new legislation. That's a very important part of our program.

The third type of activity that we support is on the ground natural resource management, agro-forestry, watershed protection -- a range of issues that address environmental and natural resources problems. Unfortunately, we do not get much into urban environmental issues because that is not the focus of our program, except in a few countries such as Egypt where we have very large funding programs.

The other group that has been very responsible for the changes in AID policy and legislation is the Congress. Since 1978, the members of Congress have amended the Foreign Assistance Act, which is our legislation, almost every year by adding more and more sections that deal with natural resources. It started out with just a little phrase in the language of our Agriculture and Rural Development Assistance Section. Next, they added a new section (118) on natural resources, then one (119) on biological diversity, and then another on tropical forests. This was all done by 1986. Congress also added in some legislation that told us to look at what the other multilateral development banks are doing on environment. So, the mandates that we get from Congress keep increasing. Unfortunately, the staff is not increasing quite as quickly as the mandates. We have never received any money earmarked by Congress for environment except once; and that was in 1987, when they designated $2.5 million for the conservation of biological diversity.

I would like to end with one thought. This is a time in the United States, with enormous debts and budget crises. The Foreign Assistance Program seems to get less and less funding and more and more requirements to do things. It is extremely difficult to create new and useful programs and expand our structures when we are taking things away from other useful programs. This builds conflicts within the Agency and makes it quite difficult to expand our work in this area. The competition between all these sectors becomes very fierce and it is quite difficult to deal with it in a time of declining budgets.

Presentation by
JANET WELSH BROWN
Senior Associate
World Resources Institute

Thank you very much. I have brought with me a book called *Our Common Future*. It is the report of the World Commission on Environment and Development (1987), and if you are not familiar with it, I recommend it highly to you. It deals with the whole question, worldwide, of how we use our natural resources, what technologies we apply, and how best we can meet the needs of a very rapidly growing population. It deals not just with the developing countries, but with the industrial countries as well. I value the book for several reasons. One is that it deals with what the industrial countries as well as what the developing countries should be doing, and that's a very important reminder which we regularly need to take into consideration. Second, it is a very positive book. It really does lay out how serious the problems of environmental degradation are, including those in the developing countries. It also does show, very clearly, how rapidly the various trends are accelerating and coming together. It provides a real sense of urgency and makes it clear that the next couple of decades are crucial. We can either get ahead of those problems in the next two decades, or the entire globe is in for *real* problems.

The challenge is very nicely laid out in this book. It discusses very clearly what the concept of sustainable development is. Development efforts will not contribute to growth for this generation and the next generation unless they are *economically sustainable*, unless they are *environmentally sustainable*, and unless they are *institutionally sustainable*. We have to be concerned about all three.

What I like best about this book, is that it explains how to integrate economic and environmental planning. Developing countries' governments, our own U.S. government, and the agencies you've been hearing about this afternoon have found that difficult to do up until now. But that's what has to be done in the next couple of decades.

My friends and colleagues in the environmental organizations (to whom I will give a great deal of credit, as Molly Kux already has, for forcing the Agency for International Development, the World Bank, and the regional banks to take seriously the environmental considerations and the consequences of their enterprises) are sometimes short-sighted in terms of their understanding of the development issues. Some of them even give one the impression that we must choose between trees or people. It's not trees or people -- it must be both. Only when we are able to bring our understanding of the ecological systems to our development planning -- not just in the Ministries of Environmental Protection, but in the Finance Ministry, the Energy Ministry, the Agriculture Ministry -- are we going to be able to achieve truly sustainable development.

The Agency for International Development, the World Bank, and the regional banks all have very good environmental policies. All of them now require that the projects they fund be seriously evaluated for their impact on the environment. Although we also had to be pushed to it by forces outside of government, the United states really took the lead in that, and we should be proud of it. We should be proud of the impact we had on the World Bank. You wouldn't have seen the kind of effort that the World Bank has put into environmental affairs had it not been for the U.S. environmental organizations and for their colleagues in other countries putting pressure on their governments as well.

We should really be very sympathetic to the people on this platform. They are committed professionals. They are very good at what they do. They have an uphill battle within their own agencies, because what is now required is not easy. It will change the way people look at development.

It is not enough to have environmental impacts statements. The studies that the World Bank is conducting are very important, but they are not a substitute for changing the way the World Bank considers development itself. What is needed now is not a better assessment of projects for their environmental impact, but an approach which looks at the whole strategy of development. It must ask of a country's development plans, "Is this a mix of activities that over time can increase productivity, and support a growing population without destroying the resource base on which their future depends?" "Is this a mix of developmental activities and programs that will protect watersheds, water supplies, fishing grounds and so forth, and conserve the soil and the water on which future development depends?" "Is this a mix of activities that will provide jobs?" "Is this a mix of activities that will slow population growth?" Or "Is this a mix of activities that raises up the poorest of the poor?" And I think the answer for most of the countries is, no.

The role of the bilateral agencies, the World Bank, the regional banks, is to change that. It is to help countries improve their own capability to undertake a very different kind of development. I don't want to underestimate the difficulty of doing this. There are institutional, political, and cultural barriers that are extremely resistant. But it can be done.

I am going to give you an illustration of what I think is the wrong way, and what I think is the right way to do go about development. I'm going to choose my example from energy because I recently had a very interesting experience. I invited some friends who had been to India this spring to speak at a lunch at the World Resources Institute. They had been travelling up and down the Narmada River Valley, looking at the plans of the Indian government to build a whole series of dams which would provide both irrigation and electric power. Power for the urban areas, especially for the commercial sector, is the chief goal of this extensive project. It's not one dam, but a series of dams -- some of them quite small, some of them very large; some of them under construction, some of them still to be built. India has asked the World Bank for assistance to build this vast project. Well, you know, the environmentalists have a lot of problems with big dams -- because big dams themselves have a lot of environmental problems and a lot of economic problems associated with them. If one really takes into account the environmental and social costs of such projects, some of them might not get build.

Well, the Bank is trying very hard to do that kind of accounting. Five of Bank people who have been directly responsible for economic, social, and environmental evaluations of the Narmada project came to that lunch, as did several of the chief environmental activists from around town. We had a fascinating discussion.

The Bank has also asked all the right questions and has done all the correct studies, with one exception which I will tell you about in a minute. It has calculated the costs, evaluated the energy that would come of it, and figured the acreage that will be irrigated. And it has looked at the down side of some of those things -- what degree of salinization and water logging can be expected, how much deforestation? The environmentalists in the room, who have done their own studies and are in contact with the Indian environmentalists who were leading the struggle against the dam in their own country, had a real argument about some of those figures. There are legitimate arguments.

The Bank has decided to help the Indian government which says it is going ahead anyway on this highly controversial project. But, as the discussion went on, it seemed to me that even the Bank staff had an awful lot of reservations. Finally, I asked, "If you have reservations about the social and environmental costs, why are you going ahead with the project?" And they said, "Well, India, has to have power and where else are they going to get it?" They had never asked that question, "Where else might the Indians get the necessary power?"

There may well be other ways to get the energy India needs, though we don't know for sure because that study hasn't been done. But I want to tell you a parallel story about California, in the early 1970s. The utility companies, as they are required to do by law in every state, presented their plans to meet the estimated needs for power over the next fifteen or twenty years. They had made their calculations of what the demand was going to be in rapidly growing California, and they put a preliminary request to build ten large power plants. There was one geothermal plant, a bunch of oil and coal fire plants, and a handful of nuclear plants. The organization which I headed for a while, The Environmental Defense Fund (EDF), hired an economist to work with their lawyer and they went in before the Public Service Commission and they said, "We don't believe that your demand projections are right, but we'll accept them. We believe that you've projected much more energy than you need. And we believe that you've underestimated the true costs of building these plants, but we'll accept both sets of assumptions. However, we want time to challenge the fact that these plants are the only way to provide that power." Seven years later, after scores of hearings and sophisticated computer analysis, EDF won the case. Only two of those plants will be built, and California has all the power it needs, just as much as it would have had if those other eight plants had been built. The utilities "found" their new capacity in conservation, efficiency, and some renewables. The cost is much cheaper, so both the rate payer and investors have benefited. The EDF economists and lawyers never argued the environmental side of those plants at all though that was the motivation for their going into the battle in the first place. They simply argued the cost. The California utilities have since set the standard in this country. They have led the way to a modern view of what it takes to produce energy. They've proved that you can get just as much "new" energy capacity through conservation and efficiency as you can by building a new plant -- and it's almost always cheaper.

Well, there are studies that demonstrate that the same kinds of efficiency and conservation can make an enormous difference in developing countries. But the World Bank economists had not asked what the alternatives to the Narmada development might be.

A short book that the World Resources Institute has put out, *Energy for Development*, has some examples. A study from Brazil for example, showed that an investment totalling less than $10 billion over a period from 1985 to 2000 in more efficient refrigerators, street lighting, lighting in commercial buildings, motors, variable speed drives for industrial capacity, would eliminate the need to construct 22 gigowatts of electricity capacity costing $44 billion. Brazil can have for $10 billion what the traditional planners think would cost $44 billion. Now, India is not that different from Brazil, but nobody has asked the right question.

Until planners start to think about the total development needs of a country, and until they start to think differently about how to get to the answer, we will not achieve sustainable development. What is required is a different kind of development, different strategies. And that's difficult to bring about. I hope you will all support AID and the World Bank as they try to do the absolutely necessary exploration on these strategies. And I hope you will all keep after them, because they need to do it faster.

Thank you.

Presentation by
JAMES LISTORTI
Environment Department
The World Bank

I am happy to be here and to see so many young faces who will be managing the institutions which are trying to cope with environmental management right now.

First, I would like to tell you a little bit about the structure of the World Bank and how it is organized, and then discuss what we are doing in the area of environment.

The World Bank group was founded in 1945, and it consists now of four organizations. They are:

1) the International Bank for Reconstruction and Development (IBRD), which lends for projects in developing countries;

2) the International Development Association (IDA), which lends or gives credits for projects in developing countries -- the poorest of the poor countries;

3) the International Financial Corporation (IFC), which intends to promote small businesses; and

4) a new organization that was just added, the Multinational Investment Guarantee Agency (MIGA), which is aimed at improving the investment climate at the international level.

The two parts that I want to talk about, IDA and IBRD, are primarily the ones that have projects dealing with the environment. IDA is intended for concessional funding for the poorest of the poor countries. To qualify, the people in the country have an $800 per capita GNP cut-off point. 80% of IDA's lending last year was to countries in which the GNP was lower than $400 per capita. What makes IDA special is that it gives credits with up to a fifty year maturity and a ten year grace period. There is no interest rate as such, but there is about .75% handling fee. So, effectively, it is interest-free money. In 1987, the Bank gave out $3.5 billion in credits from IDA. The bulk of Bank operations comes from IBRD itself. It lends at an interest rate which is roughly 3% under commercial bank rates; now 7.59%. It has a repayment period of about twelve to fifteen years. Last year, it lent $14 billion under those conditions.

That is how the Bank operates as a financial institution. It is similar, in fact, to the procedures described for the Inter-American Development Bank as a bank where it gets its capital on world markets. We have roughly 150 members.

From an environmental perspective, there are two important points to draw from all of this. First, the Bank typically funds only about fifty percent of a project which normally is used as foreign exchange to purchase imported equipment. The remaining project costs must come either from local resources or co-financing by other institutions. This poses problems for some environmental issues because they frequently are competing for money from other local sources with projects that are equally important.

Second, as a bank, the World Bank or other development banks require compliance with stringent conditionalities more complicated than similar requirements of commercial banks or of aid agencies which give grants rather than loans. The Bank's interest is just 3% less than commercial banks. This is also important for certain environmental problems. When you are looking at solid waste disposal (a subject coming up in the news these days) and in particular the ppractice of sending developed countries' wastes to the developing countries, which is against Bank policy, the money to finance that activity does not need to pass through any channel such as the World Bank because it is commercially viable. Thus, why should those countries come to the Bank and face stringent conditions, when governments can borrow from the private sector? We have to worry about some of those things.

You've heard a little bit about the World Bank reorganization. It's a non-stop topic, at least for people in the developing community. The reorganization was intended to make the bureaucratic structure of the Bank reflect more the needs of the developing countries by having a country rather than sectoral focus. Let me explain to you briefly the Bank's new structure, and then go into what we are doing.

We now have six senior vice presidencies. I'm going to focus on just two of them because they are the ones that have the environmental activities and the ones that are important to today's talk. One is called the Operations Complex; they have the projects. The second one, where I come from, is called PPR -- Policy, Planning and Research. Collectively, these two units have some thirty-seven departments.

The Operations Complex is organized into four geographic regions of the world: Africa, Asia, EMENA (Europe, Middle East, and North Africa), and LAC (Latin America and the Caribbean.) Each of those four regions in turn is subdivided into departments with clusters of countries that belong together as a working group. The Sahelian Department is an example. Other countries such as Brazil, India, and China comprise a department unto themselves because they represent large lending programs. Each of the regions is therefore composed of departments based on country clusters, plus one additional department called the Technical Department. The Technical Department serves as an internal consulting service for the entire region, providing expertise that may not be available within a department, that has, for example, enough economists and financial analysts but few engineers or sociologists.

PPR, by comparison, is broken into sectors: Agricultural and Rural Development, Infrastructure and Urban Development, Industry and Energy, and Population and Human Resources. A fifth area of concern is the environment. We don't have environment sector projects per se, but we could in the near future. The purpose of the environment sector is to provide environmental input into the four operating sectors where we currently do have projects.

Altogether, there are about sixty full time staff in the Bank exclusively working on environmental issues, plus consultants. There is an environmental unit with about five regular staff within the Technical Departments of each of the four regions. Then, in my department, we have another thirty. In addition, in order to show the importance that the Bank now accords to the environment, we have appointed a Senior Advisor for Science and Technology who sits beside the Vice President.

The important thing about the reorganization of the Bank is what it has done regarding its procedures, and not simply its structures, to make environment a more important issue. The reorganization now provides for three required clearances: legal, procurement, and environment. Prior to the reorganization, we had had standing environmental policies since 1972, but it was more difficult to stop a project *strictly* on environmental grounds if other persuasive factors such as costs or various trade-offs were considered more important. The reorganization has strengthened environmental advocacy.

In addition to more formalized procedures, we have had a slight change of emphasis from accommodating the borrowers' concerns of "today" to looking more toward concerns of "tomorrow." Prior to the reorganization, the Bank was concentrating on food production and alleviating rural poverty. Now we are placing greater emphasis in our lending in accord with tomorrow's problems such as desertification, desalinization, and over-exploitation of forests, which are really the manifestations of today's problems in the developing countries.

Those are general policies of the Bank. What are we doing in specific? In the Operation Complex -- Africa, Asia, EMENA, and LAC -- we focus on individual projects and countries. We are writing Environmental Issues Papers which, over the course of two years, look at each country to obtain an overview of the environmental problems for that country. In addition, we have country studies that will be conducted on thirty countries over the next five years looking at key issues within those countries. From the two, we base a lending program in keeping with the potential of the country and the Bank's capabilities to respond to their environmental needs. Studies are underway already in Indonesia, China, Bhutan, Nepal, Haiti, Cote d'Ivoire, Bolivia, Niger, Costa Rica, Philippines, Madagascar, Colombia, Malaysia, Rwanda, Lesotho, Sudan, and Burkina Faso. In Indonesia, for example, where resettlement in a transmigration project is an important issue, the study will emphasize those aspects.

In addition to these country-specific activities, wherever we can we are trying to coordinate the Bank's activities with existing programs on the outside, such as the Mediterranean Action Plan involving several countries and organizations. The Bank has its own acronym: EPM, Environmental Plan for the Mediterranean. In this case, we are trying to match our efforts with those already existing in other organizations to look at such things as waste water, effluent discharge, industry and energy emission, and oil spills. Similarly, we are also conducting "Policy Studies" which lead to policy changes. For example, we are conducting a study on the long-term environmental repercussions in cities such as Istanbul. And finally, we hope to be able to have our general lending profile reflect environmental concerns by training the staff to be more aware of different issues.

That is what is happening on individual projects and countries in the projects based in the Operations Complex. My department, the Environment Department within PPR, works closely with the rest of the Operations Complex and looks at global issues. We have two divisions. One division deals primarily in providing highly specialized technical support for projects where the Operations Complex may not have the environmental technical capacity; for example, in looking at marine ecological issues, or in handling toxic wastes. That division is also providing assistance with geographic information systems. These specialists can help the Bank staff, plus the staff in a given country, learn how to use modern satellite technology, as well as how to avoid being sold a bill of goods by a consulting company or private businesses that provide fancy equipment that breaks down a year later.

The other division we have is working on eight task forces on global problems: deforestation; conservation of biological diversity; watershed degradation; desertification; human welfare aspects of irrigated lands such as salinization and the spread of certain diseases, for example schistosomiasis; pesticide management; industrial disasters; and urban environmental issues. Task force members come from inside and outside the Bank.

The Environment Department is also conducting several specific studies with policy implications, such as looking at agriculture pricing policies, and sustainability. What does that mean? For instance, if economists and financial analysts are considering cash crops and export earnings, they may advise price supports to wheat rather than coffee. What are the environmental consequences of that policy? Wheat is harvested every year and is pulled up the roots, and is therefore prone to erosion as opposed to coffee which has deeper, more stable roots. Those are the things that economists and financial analysts might not normally consider.

We are also looking at integrating natural resource considerations into national accounts, which do not usually reflect environmental degradation. For example, a country may destroy the environment in harvesting lumber and that counts as "good" because the economic inputs that have gone into destruction are recorded. Personally, I have difficulty with that concept. To help overcome this flawed accounting, we are trying to show, for example, the opportunity costs of chopping down forests that are usually forgotten. The lumber is evaluated, but what about the traditional goods that disappear with the trees? We are attempting in two studies, one in Ghana and one in Cote d'Ivoire, to look at exactly what the local economy may have available in the form of spices, food crops, pharmaceuticals -- anything that the people use in their traditional economy which disappears with the forest but is forgotten in regular accounting procedures.

In addition, we are also training Bank staff in general. We have had a number of training seminars for two and a half days focussing on specific regional issues. We have had eighty-two brown bag lunches or single-day sessions on environmental issues. We are now looking at the framework for overall training in terms of economic incentives and institutional problems. We will look at questions such as, "What works?" "How does it work?" "How can we be positive?" "What are the institutional inadequacies that are across-the-board problematic in developing countries?" "How can staff learn to cope with them and avoid structuring a project that will not work under local circumstances?"

Thank you.

Presentation by
DR. EDWARD G. FARNWORTH
Ecologist/Environmental Advisor
Inter-American Development Bank

Thank you. I appreciate being here this afternoon to participate in what I see already is a very interesting forum on sustainable development. I think that this is a great opportunity for you to learn about many different issues in a very short time from some very good people -- experts in the area.

This afternoon I would like to talk briefly with you about the Inter-American Development Bank. The Bank was founded in 1959 by the United States and other countries in this hemisphere in response to the growing need for social and economic development in Latin America. The World Bank had recently been organized with a broad view and mission, but there was no organization to focus exclusively on economic development in this hemisphere -- South America, Central America, and the Caribbean nations. Consequently, the Bank started as a funding agency for social and educational programs in the *inter-American* region. The IDB has always had a view of economic *development*. Although the phrase "sustained development" was not used, it was always implied. Economic development was always thought of as sustainable itself. The Bank has been an organization that is concerned about the development of its member nations, so that economic progress would continue for long periods of time. Whatever effort that the Bank put into these nations would be a building block for subsequent development stages.

It is a *bank*; a financial institution. It lends approximately $3 billion annually and provides technical assistance in the form of loans and grants. Since its founding in 1959, it has lent approximately $40 billion to its borrowing members in the hemisphere. Not only does the Bank lend money for large projects, but it has technical cooperation programs to help the borrowing countries develop specific projects for which money may subsequently be lent. The IDB also has a small projects program, which lends money to cooperatives, small farming organizations, and small entrepreneurs in urban areas, in order to provide credit for development.

The Bank is owned by its 44 member countries, which means it is also owned by its borrowers. Latin America and the Caribbean contribute 53.9% of the capital stock of the Bank, which means that they have 53.9% of the voting power. The United States has 34.5%, Canada 4.4%, and non-regional nations which are primarily European nations, and Israel and Japan contribute 7.2% of the capital stock. The Bank also raises money through bond issues which are guaranteed by the Bank's capital contributions.

In recent years, the IDB has lent about 28% of its money in the energy sector for projects such as hydroelectric and thermal electric generating plants, transmission lines, and pipelines; 21% for the agriculture sector for farm credit, irrigation, land settlement, rural development, and fisheries. About 16% of its money has gone to industry and mining, and 13% to transportation and communications projects, highways, and ports. Environment and public health have taken 9% of the money for sanitation, potable water, hospitals, and clinics. Education has received 4%, urban development 4%, and other areas 5%.

The Bank does recognize that sustainable economic development is based on the sound use of the natural resources in developing countries. It is only through appropriate use of these resources and the resolution of conflicts about use, that economic development can be achieved. Now, there are a number of people in the audience who will say that this sounds pretty transformed or enlightened for this organization -- and I think it is. This transformation in the IDB is not something that has taken place just in the last few months, but has evolved over the last couple of years and continues.

The Bank had, I would say, a relatively poor record of environmental awareness and appropriate use of natural resources throughout the seventies and early eighties. This was not unique with the IDB. Many other lending agencies, multilateral and bilateral, had insufficient environmental awareness or knowledge of natural resource management. These organizations were supporting the use of natural resources for economic and social development and were not very aware of the potential and actual consequences of some of the practices. Improvement started significantly around 1984-85, because of pressure from outside groups and from slow change within the organizations. The nongovernmental environmental organizations in this country, Canada, and Europe, have been instrumental in influencing the way this Bank and other lenders view the environment. This "period of the storm," from 1984 to 1987 and 1988, was the critics' time to criticize publicly the World Bank, USAID, IDB, and the Asian, and African Development Banks. Now, I think, things are changing for the better.

Earlier this afternoon, Alex Echols mentioned that the new president of the Inter-American Development Bank, Enrique Iglesias, has declared publicly that the Bank will have a better view of environmental issues and will be a "Bank of the Environment" which will seriously take into account the sustainability of its projects and the resources that are being used. This reinforcement of the seriousness of environmental issues is being achieved through application of the environmental policy the Bank has had since 1979 and through the Environmental Management Committee, created in 1983. And so, we have evolved -- up to the present time -- and will continue to change by expanding policy and by adding better procedures, additional guidelines, more environmental awareness by the professional people within the Bank, better environmental safeguards in projects, and expansion of this awareness to the member countries.

We heard a lot today about "top down" approach. Since I have been here, most of the speakers have talked about what people in the United States have been able to do, are able to do, and should do for the developing countries. This is the approach of the North (developed nations) telling the South (developing nations) how to do it. It is also the approach of legislating how things should be done. Our approach at the IDB has been to work with our developing member countries to help make changes in technical and institutional capability and environmental awareness within the country, so that whatever the environmental community develops and proposes here in the developed countries, is applicable and acceptable in Latin America and the Caribbean. One major problem is that the lending institutions are very good at developing policy and procedures in projects, have grand methods for doing environmental assessments, and have contractual conditions in loans that require certain studies to be done and certain safeguards to be taken. However, if the capability to execute all of these different criteria or conditions does not exist in the countries, then we will not be successful in avoiding or minimizing environmental degradation, using natural resources well, and executing economically sustainable projects. The Bank is very actively attempting to strengthen the institutions within the countries that are responsible for environmental protection. We are also looking for an executing agency for our particular projects to see if they have the capability to execute the environmental protection package. If not, we will help them develop the capability through loans or technical cooperation activities.

Let me give you an example of how environmental components and institutional strengthening is built into loans. I am working on a road project in Bolivia with IDB engineers and Bolivian officials. In the late seventies, a loan was approved to Bolivia to build 155 Km of new road in the lowlands. At the time of approval of the loan, only about fifty meters on each side of the road was considered to be the area of influence. Two years ago, the Bank received a request from the Bolivian Government to rehabilitate badly degraded road sections on each end of the new road in order to make a continuous major highway for shipping agricultural products between Santa Cruz and Cochabamba. I visited the project in October 1987, evaluated the environmental situation, and with the help of a Bolivian consultant's report and working with the project engineers, we developed a view that we could not consider these two parts of the road as separate entities but would have to consider the two end pieces, and the new middle section as one entire corridor which would require environmental protection in the area of influence. An environmental program that protects the watershed upstream from the road was incorporated into the new road rehabilitation loan. This was easily justified because if the watershed is cut and deteriorates, there will be erosion and flash flooding that could be detrimental to the bridges and roads. If the road is closed for three or four days during the rainy season because of flooding, traffic will be stopped which reduces the economic benefits of the road. These arguments made sense to the engineers and economists.

As a result, we were able to implement an environmental protection program for the protection and survey of the watershed for appropriate land use, and include a protection and management plan for the Amboro National Park that will help develop a viable and functional park for tourism and research. There will be a program for sustained forestry use, a small protection area for endangered cave-dwelling birds, and protection and health education programs for two Indian groups. So, that is the program -- but how are we going to execute it? We have asked the Bolivian Government, as a condition in the loan, to create an Office of Environmental Affairs in the Ministry of Agriculture to execute the protection program. This is one of the first institutions in Bolivia to provide environmental protection and hopefully out of this one project unit will grow an environmental management unit that will be useful for other Ministry of Agriculture programs.

There are now many examples of these kinds of environmental protection programs and institution building in IDB projects. I will conclude by saying that the Inter-American Development Bank is now looking carefully at projects.

Projects that may have significant environmental impact are identified early in the project cycle. We are making assessments and are training the people in the Bank through outside forums and internal education on environmental awareness and how to deal with such issues. We are working extensively in Latin America and the Caribbean to help the developing countries wisely use their natural resources for sustained economic development.

Thank you.

CHAPTER 5

CORPORATE RESPONSE

Presentation by
DR. PHILIP MASCIANTONIO
Vice President
USX Corporation

Thank you for the kind introduction. I appreciate the opportunity to be here to talk with you today. I work in the steel division of the USX Corporation, formerly called U.S. Steel. I would like to talk about what USX has done in terms of the global environment and our activities in some of the organizations that have been concerned with that problem.

Let me first start off with a little story I just heard last week that concerns our resources. It relates to a couple who was taking a Caribbean cruise. During their cruise, a storm came up and the husband got washed overboard and was lost at sea. They could not find him after a long search. The distraught wife went back to her home in the United States, and after several months of mourning and grief, she got a call from the State Department. The official said that they had found the body of her husband in an oyster bed in the Caribbean. She said it was good to hear that they found the body and asked if he had any details? He said, "Well, we want to know what to do. We brought the body up and it was covered with oysters. They were able to remove about a half a million dollars in pearls from the oysters that had accumulated on the body." The wife thought for a while and then answered, "Well, please send the pearls to me and reset the bait!" It shows you what you can get from the sea.

I was a little distressed last week. The editor of our local paper was apparently very concerned that ninety million people were added to the world's population last year and that over the next ten years another billion people would be added. And he noted that this would further stress an already stressed planet. Even in the small town I live in, the environment is big news and a great concern to everyone. Hardly a day goes by when we don't pick up the paper and see a story on the environment, the resources, and the problems that planet earth has in sustaining its population.

I think industry has great concern about this, too, and although we have to be concerned about our day-to-day problems -- of trying to make a profit for our stockholders and having a good report for the next quarter -- I think you'll find that most people in business are concerned about the future of the planet. The difficulty that we have in addressing this issue is that we see our role primarily as an engine in the economy that stimulates economic growth. And, although I think we all recognize there are social responsibilities that go with that, it is frequently difficult to translate them into the day-to-day decisions that we must make when we address that next quarter.

One of the great contributions that we received from the relationships we have with the United Nations Environment Programme is the leadership that Dr. Tolba exhibited back in 1984 when he urged industry -- world industry -- to sit down and talk about the global problems. As the result of that urging by Dr. Tolba, the World Industry Conference on Environmental Management was held in Versailles in 1984. That brought together, I think for the first time, about four hundred representatives from industry and government covering about seventy nations to talk about global environmental issues. A lot has happened as the result of that conference. It ended up being referred to as WICEM and there has been follow-up WICEM activities ever since that event.

One of the things that came out of that which involved our company was the formation of an organization called the International Environment Bureau, the IEB. Five chief executive officers from major corporations around the world got together in New York about six months after WICEM and decided that one of the ways to implement the recommendations of the World Industry Conference was to develop a bureau that would pursue additional dialogue and encouragement for industry worldwide on global environmental problems. The IEB was put together and is headquartered in Geneva, Switzerland. It has now had two years of experience. It is organized under the International Chamber of Commerce headquartered in Paris. The primary focus and objective of the IEB is to continue dialogue and exchange of information.

I think one of the ways that industry can play a role in sustainable development is in the area of information exchange. Industry is a tremendous repository of technical information -- information that is needed on a site specific basis, on a case by case basis, to solve problems that developing countries encounter as they press forward in their quest for sustainable development. And I agree with what Joan Martin-Brown said, that sustainable development doesn't necessarily mean industrialization. It can take many forms, but it is probably best done in a way that is tailored to the area for which it is applied. In certain areas of the world, industrialization is probably not the right answer. In other areas, I think world industry can play an appropriate and important role in that regard.

One of the things that we, as industry groups did through the IEB -- following the release of the Brundtland Report, *Our Common Future* -- was to develop a meeting in Aspen, Colorado, in 1987 to review that report from the standpoint of what industry can do to help implement some of the recommendations from the Brundtland Commission study. I participated in that conference along with eighteen other company representatives. As the result of that meeting, we came up with some recommendations which they put together. The IEB published it, mentioning some ways in which industry can help participate in sustainable development. We came up with six recommendations. I just want to read a few of them for you:

First, they said that the Brundtland Commission Report was significant and it should be examined by industry as an important part of its planning. They embraced the concept of sustainable development and endorsed it as the way in which global environmental problems can be approached. I think that was an important thing that the Commission Report did -- it has ignited industry in looking at the global problem in terms of how industry can be a positive force rather than being looked upon as perhaps one of the major causes.

I believe that we have a little bit of a paranoia in industry, in that we frequently get accused of being the source of some of the world's global problems. I think the Aspen Report also pointed out that industry should play a key role in attempting to participate in the implementation of some of the recommendations of the Brundtland Commission Study.

One of the other items that came out of the Aspen Report was that there was a recognition that industry will have a difficult time participating unless governments set the framework for us to enter into the process. On its own, industry has a difficult time coming to grips with some of these global problems. When we read about population explosion, deforestation, desertification, and so on, industry has a hard time relating to those in terms of tangible programs. And I think what the Aspen Conference said was that governments need to provide a framework for industry to have an entry point into the system and that is going to require a lot of attention. If the environmental community, for example, thinks that industry can rush in and somehow change its view of how it does business and how it participates, I think it is mistaken that it can happen on industry's own initiative. Where problems exist, governments need to invite industry in and set the climate and the framework for industry to participate.

One of the other things that we concluded in Aspen was that the free market economy may be best suited to help solve these problems. Many people may not view that as the right mechanism. But our experience and our belief, at least, is that in countries where the free economic system seems to work, it is important not to have stringent government controls on how industry operates in terms of how it participates. We need to have the attitude of looking at projects in terms of their cost effectiveness, their profitability, and their place in the market as the basis for action, rather than totally planned and controlled economic approaches.

And finally, we concluded that industry should accept the opportunities and the invitations to cooperate with governments and international organizations in getting involved in these areas. We have circulated very widely among industry groups, particularly in the United States and Europe, to help get recognition from industry. We have a role to play and we ought to get busy with the prospect of examining how we operate so that we can participate.

The International Environment Bureau sponsored a meeting here at the World Bank about two weeks ago, which some of you may have participated in. The idea of that meeting was to bring together industry and World Bank officials and their affiliated organizations to talk about the concept of sustainable development. Sustainable economic development and environmental management has a great sex appeal -- it's something that everybody wants to wrap their arms around. One of the things we wanted to do at this meeting with the World Bank was to have a chance to explore specific areas where we might be able to work together to get projects started. Everybody seems to talk about this concept, but we all seem to be having trouble getting it implemented. So we thought that by working with the World Bank, we might be able to develop some really concrete ideas and projects. I think that's moving along.

We have additional meetings planned with the Bank and with industry representatives to find areas where we start entering into the process, particularly in some of the developing countries. We think it has high promise. Some very good papers were given at those meetings which we are going to publish. They ought to be coming out shortly and we are planning on widely distributing them through the International Environment Bureau. Follow-up is very important in that regard.

One of the important papers that was delivered at that meeting was prepared by and presented by Bill Ruchelshaus, former two-time head of the Environmental Protection Agency. Bill Ruchelshaus also served on Mrs. Bruntland's World Commission. He had a great deal to say about this concept, not only with regard to what was behind the work of the Commission, but also about the role of sustainable economic development.

I just want to mention a couple of things from Bill's speech. He seemed to be concerned that industry is constricted by the desire for profitability and shareholder returns. The problem is how to continue to keep that as a goal, because that goal is important. Bill was basically saying that poverty is the enemy and the way we can overcome that is by increasing the wealth of the lesser developed countries. I'd like to read from one section which I think defines this point very well. Bill says, "Sustainable development is our only option for solving these global problems. As I pointed out, it is simply not possible for three quarters of humanity on its way to development to repeat the environmental rite of passage when one third of us had to go through that same process. The planet won't stand it. How then can the corporations and funding institutions of the developed world help make billions of people richer fast without wrecking nature in the process?"

I think those words give us a lot to think about. That's what this is all about. Those ninety million people that were added to the earth's population last year have got to survive. They've got to do that by using the resources that we have in this planet. I think the real challenge is how we can do that. We have to do it without wrecking nature in the process.

I think the business community is receptive to hearing from anyone who has ideas on how we can get into the act.

Thank you.

Presentation by
WILLIAM F. O'KEEFE
Vice President and Chief Operating Officer
American Petroleum Institute

In my remarks today, I want to begin with a general proposition -- a philosophy -- that explains my thoughts in addressing the theme of this conference: Sustainable Development. The proposition is this:

Every generation is confronted with challenges that are complex and seem to border on being insurmountable. Those challenges test a society's imagination, ingenuity, and self-confidence. The history of our nation shows that when they are addressed with confidence and creativity, they produce new knowledge, economic progress, and a better life.

Clearly, protecting the environment is one of the great challenges our nation faces today -- and one to which my philosophy applies. It is a challenge because reducing pollution further will be difficult and expensive. It is a challenge because our best hope for meeting both our economic and environmental goals requires replacing confrontation with collaboration.

The first part of the challenge, the cost and difficulty of reducing pollution, is easy to understand. While we have made great progress reducing pollution, the hard part of the job remains. Take for example, clean air. Over the past twenty years, we have greatly reduced the so-called "criteria" pollutants, principally by controlling larger, easily identified sources. However, the remaining problems -- often caused by many smaller sources and aggravated by conditions over which we have no control -- are stubborn and complicated and could add significantly to the $30 billion a year we already spend on air pollution controls.

Today, we also face tough, newly recognized problems -- the greenhouse effect, ozone depletion in the stratosphere, waste management, and groundwater contamination. Some of the problems are global in reach and will be far more difficult to solve than the problems identified a generation ago at the beginning of the modern environmental movement.

The second part of the challenge -- reducing pollution while ensuring economic growth -- is more ambiguous. On its face, it is a proposition that most people would readily embrace. After all, growth produces the benefits of modern society. Yet there are those also who would dismiss it as an industry strategy to avoid responsibility. That charge is unfair. Industry strives to meet environmental standards, and there are many reasons why. First, the law mandates it. Second, ignoring pollution would be a dumb business philosophy. But most importantly, industry appreciates -- much more than it did twenty years ago -- the hazards of the substances it produces. We know these hazards, unless properly managed, can threaten ourselves, our families and the public at large.

Certainly, in my own industry no responsible person questions the need to protect the environment. We have extensive environmental controls in place.

We employ people to keep the controls working and to improve their effectiveness. We are part of the solution. The differences we have with some environmentalists tend to be in assessing the extent of problems -- the risks they pose -- and in deciding how to allocate society's scarce resources among control options and other goals that are important.

It is worth emphasizing here that the choices we make mean more than spending corporate, consumer, or taxpayer dollars. They represent foregone opportunities to grow, to consume, and to invest in solving other problems. While protecting the environment is and should be one of the nation's top priorities, it competes with many other important goals -- technology to increase competitiveness, job training, AIDS vaccine, improved education, and improved health care.

Some people also feel that it is unnecessary and undesirable to seek both economic growth and environmental protection. They argue that economic growth is the root of environmental evil: growth equals industry equals pollution. But they forget that economic growth is essential for the continued well-being of our nation and for providing hope to those here and abroad who are less well-off.

They also fail to recognize that economic growth is the best way to increase environmental protection. While growth involves risks to the environment, it also produces technology for solving environmental problems. Paradoxically, it makes life both better and safer.

Aaron Wildavsky, a political scientist from the University of California at Berkeley, argues this point in his book *Searching for Safety*. He also looks at the other side of the coin. If economic growth and technological development were stopped or significantly reduced, there would be less progress in improving personal safety and health because many new devices and processes would not be tried.

An example of how the technology balance works is new drugs. While they may kill or seriously harm a few individuals, they can save the lives of thousands. Unfortunately, some people oppose marketing of new drugs until proven absolutely safe, which is impossible. Clearly, this is shortsighted. If we count the consequences of saying "yes" to new technology, we must also count the consequences of saying "no." Or as Wildavsky says, we must balance "the image of complex technologies as a major threat to safety" against "the grim reality of living without such technologies."

We need to think about something else. While we would all lose if economic development were curtailed, those hurt most would be those least able to bear it -- people in the developing countries. They would continue to suffer hard, unhealthy, shortened lives.

Obviously, the key to correct decisions -- be they for new drugs or environmental control -- is balance. Consequences and benefits must be weighed so that policy ultimately serves environmental and economic goals. That is what most people really want. To quote Wildavsky again, "The trick is to discover not how to avoid risk, for this is impossible, but how to use risk to get more of the good and less of the bad. The search for safety is a balancing act."

Rising to this challenge can not be accomplished through confrontation. Decision making by confrontation promotes gridlock, inefficiency, and less progress. For example, virtually every study of air pollution controls concludes that they are inefficient. A recent Brookings Institution study estimates that better air pollution policies could save the nation about 30% of its pollution control budget -- or about $10 billion a year. With those savings, more could be spent on other environmental problems and our global competitiveness could be improved.

The last two decades of conflict between environmentalists and industry have institutionalized the emotional, counterproductive debate that shapes our environmental policies. The time has come to recognize that we can no longer afford the waste produced by constant confrontation. If we continue that course, we will do less well in solving the tougher environmental problems of today and, as a nation, we will be poorer.

The history of progress in our country is one in which differing ideas and philosophies were competed freely and in which extremes were usually rejected in favor of decisions reflecting our pluralistic values. This should be the model for a more rational process of environmental policy-making. People with differing values and philosophies must be open-minded enough to work together to rigorously analyze problems and evaluate the consequences on society of alternative courses of action.

This approach was used recently to develop a strategy to control chlorofluorocarbons. It can be done with other environmental issues if competing interests find a way to work to achieve common goals.

Such an approach will not guarantee agreement or an absence of conflict which, after all, stimulates creativity. But it will improve the prospects for rational, well-considered solutions to the problems we face. I have no specific formula that can easily lead us away from confrontation. What I do have is a firm conviction that the emergence of a consensus-oriented process is indispensable to sound environmental policy. Without it, all of us -- and the environment -- will be much worse off.

Presentation by
GERALDINE V. COX, PH.D.
Vice President
Technical Director
Chemical Manufacturers Association

What does sustainable development really mean? If we speak of sustainable development in the geological sense, it means one thing and quite another if we look at sustainable development in the temporal sense.

I have no doubt that the earth will survive man. In what form it will survive is another question. Can man survive earth is a more temporal question and one that we should address. The earth has a limited amount of resources in that the number of molecules of different elements is finite, and man has learned to modify the form of these elements to his benefit -- and sometimes to his detriment.

To maximize the benefits and minimize deleterious effects of man's existence, we must practice sound environmental management. Environmental management is the effective use of nature's resources to maximize the benefits and minimize the adverse effects of that use. I am convinced that man can live in harmony with the environment, but he has a long way to go before he begins to approach that harmonious equilibrium.

All too often, our environmental management laws work counter to this goal. The political, social, and economic pressures win out over environmental pressures. This is true in our land use as well as in our industrial practices. In the United States, our environmental laws are a patchwork quilt of often conflicting directives that are more subject to political expediency than to sound environmental management.

In the *Tao of Leadership*, John Haider observes,

> The world's goods are unevenly distributed. Some have a great deal. Most have very little. We are running out of enough resources to go around. Everyone knows that.

What is remarkable about that quotation? It is Haider's translation of *Tao Te Ching* written by Lao Tzu in the fifth century B.C. Obviously, these are the same concerns of today. Since the fifth century B.C., technological growth has enhanced man's ability to extract the earth's resources. In this century alone, exponential technological growth has changed the face of the earth in ways our grandparents couldn't even imagine in their youth. Unless technological growth is stifled -- a real concern -- we can expect to see increased efficiency in operations and environmental control. We can expect to grow even more efficient in our use of natural resources. However, we should not become complacent. We cannot assume that new technology will solve today's problems. Passing technology-forcing environmental laws will not necessarily force technology. We must become more prudent in how we regulate our growth and industrial development -- from both the resources conservation and the industrial growth aspects.

Man must learn to live in harmony with the rest of the living world, which is often a difficult task when faced with burgeoning population growth. This growth frequently creates demands for more energy and renewable resources than the locale can provide. Man does not, or at least did not in the past, plan for the effective management of wastes from his endeavors.

The types of environmental conflict vary from industrialized to developing nations. Take energy, for example. Industrialized nations tend to deplete fossil energy resources at an alarming rate while their residents use little personal energy to obtain the resource. People living in developing nations spend a disproportionate amount of their personal time seeking simple energy sources such as wood or dung. The search for energy promotes the denuding of forests -- England suffered from this in the sixteenth and seventeenth centuries -- which begins soil erosion and subsequent nutrient buildup in receiving water bodies. Use and misuse of water creates salt buildup which occurs due to irrigation of arid areas, and depletion of groundwater supplies faster than the recharge of the aquifers. This misuse of basic resources aggravates and accelerates the desertification process.

The infant mortality rate in developing nations is high -- often due to simple diarrhea from inadequate water quality. Some argue that the solution to the world population explosion is better standards of living worldwide. With the social and religious pressures in some of these nations, I am not sure that this observation is entirely valid. The observation does have some truth, but I do not think that raising the standard of living alone will solve the population growth.

Vast amounts of tropical forests are still being stripped beyond repair for a few years of productivity. The slash-and-burn technique of clearing land, generally practiced in the tropics, leaves bedrock exposed after the layer of soil is washed away. The fragile equilibrium between the tropical forests and its supporting soil is shattered for generations to come. This reduces reoxygenation levels and allows buildup of carbon dioxide level critical to global warming.

From these examples, it's clear that not all pollution is industrial. What is industry's responsibility in environmental management?

Industrial leaders have a responsibility to design, locate, and operate their facilities and manufacture their products in an environmentally sound manner. The Chemical Manufacturers Association adopted a policy in 1983 which rearticulated earlier policies from 1964 and 1970. The Association's positions on health, safety, and environmental quality follow.

Public recognition of the benefits of chemicals in today's society is tempered by public concern about the impact of chemicals and hazardous waste on human health and the environment. Recognizing this, CMA endorses the following principles and urges its members and all chemical manufacturers to adopt them.

1. We intend to produce only those chemicals that can be manufactured, use, and disposed of safely.
2. We will conduct our operations in compliance with all applicable laws and regulations.
3. We will cooperate with appropriate federal, state, and local agencies to deal with problems created by past disposal of hazardous substances.
4. We will conduct or sponsor studies to increase understanding about health and environmental effects of our processes, products, and waste materials.
5. We will foster continuing dialogue with a broad range of groups that are concerned about the impact of chemicals and hazardous waste on health and the environment.

With the guidance of this policy, the Chemical Manufacturers Association has conducted health reviews on the impact of hazardous waste sites. We have sponsored many dialogue and consensus activities with groups many consider our adversaries. We have developed training materials about our products for our members and those who need to know. For example, we developed a number of audio-visual training materials for emergency responders. We also operate a lending library of training materials for the emergency response community beyond the chemical industry.

The Chemical Manufacturers Association developed the Community Awareness and Emergency Response (CAER) program. CAER is an outreach into the communities where our members operate. CAER is a guide to develop emergency response programs beyond our fence line into those communities. The program was so successful that the United Nations Environment Programme has asked for CMA assistance to set up a parallel program worldwide.

The Chemical Manufacturers Association began an emergency response center in 1971 to provide immediate chemical information to those who were handling chemical incidents in the United States. This program, CHEMTREC, the Chemical Transportation Emergency Center, can now respond to inquiries in fourteen languages through a cooperative effort with the Agency for International Development. This joint government/industry effort allows inquiries to assist in local emergencies. CHEMTREC uses the latest information technology, the optical laser disc to access information contained on more than one million material safety data sheets. CHEMTREC also can provide physician assistance by teleconferencing physicians working at the scene of an emergency with corporate physicians and toxicologists who are familiar with the material. At company request, CHEMTREC can activate a team of emergency responders to respond to incidents in the United States and Canada when the company can not respond itself.

The chemical industry has a role in preventing accidents as well as providing assistance when incidents occur. Obviously, one can not prevent all releases, but the chemical industry is working to reduce both accidental and routine operational releases for materials to the environment. CMA provides a forum for discussing control techniques and developing guidance documents for individual company use. CMA focusses on plant design, operation, maintenance, inspection and audit, transportation safety, and health and safety of its employees and anyone who uses or is exposed to our products.

The Chemical Manufacturers Association adopted an air toxicity control policy in January 1986. CMA's policy promotes practices among its member companies that protect the safety and health of employees and the residents of communities in which they operate. The chemical industry's goal is to assure that employees and communities are not adversely affected by our operations. Implicit in this assumption is that if people are protected, then the environment is protected.

CMA developed a program through its members that has the following action elements:

For accidental releases:

1. Identify materials which, if released, could pose a risk of harm to employees, community health, or safety.
2. Use the best available scientific information and procedures to assess the potential for accidental releases in quantities sufficient to adversely affect employees, community health, or safety.
3. Institute programs, as needed, to protect employees and the community from such potential releases.
4. Vigorously support and implement the CMA Community Awareness and Emergency Response program, and the National Chemical and Information Center programs - CHEMTREC, CHEMNET, Emergency Response Training and Chemical Referral Center, CRC.

For process emissions:

1. Accelerate the development of an inventory of existing air toxic emissions.
2. Use the best available scientific information and procedures to assess the impact of these emissions on employees and the surrounding community and to determine the adequacy of control technology in place.
3. Move rapidly to reduce these emissions as needed to safeguard employees, public health, and the environment.
4. Communicate the results of these actions to appropriate communities and government agencies.

CMA and its member companies will periodically reassess this program as additional scientific information and technological improvements become available.

Based on this policy, CMA launched a major program to identify and reduce emissions from processes. The industry effort is ongoing and seminars, information collection, and other activities fostered by the effort are producing major improvements in air quality. The several hundred-page implementation documentation for air quality was widely distributed and is available for purchase from the Chemical Manufacturers Association.

Similar activities in waste management track waste reduction and improved treatment practices in the chemical industry. Our waste minimization effort has three basic elements:

1. It provides an industry program to promote and assist member companies in developing and carrying out waste minimization programs, i.e., workshops, resource manuals, newsletters, and awards program.

2. The effort has a measurement of waste minimization performance to document industry progress, ie., supporting the Environmental Protection Agency's efforts to establish an adequate national data base.

3. The plan includes communication of member company and industry waste minimization activities and results, ie., efforts to promote progress and improve understanding including program review with other groups.

Annual surveys from the past six years document substantial reduction in waste generation and increases in waste treatment levels in the chemical industry.

I use these as examples of the Chemical Manufacturers Association activities. We do many other things. For example, our members formed the Chemical Industry Institute of Toxicology in 1976. This group studies the fundamentals of toxicological mechanisms so that we can better understand how chemicals interact with living systems. Their pioneering research has produced fundamental shifts in the understanding of toxicological data.

Members of the chemical industry worked with conservation groups to form Clean Sites, Inc., in 1984. This nonprofit organization was established to augment government cleanup of old hazardous waste facilities. Clean Sites, Inc., has a proven track record of successful negotiation and remediation for substantially less cost than government operations.

As you can see, the role of a trade association is more than a mere lobbying organization. We foster development of industrial practices and work to achieve those goals. This often means acting before laws and regulations force us to take actions. If we are doing our job, the trade association should help raise the environmental awareness and performance of the entire industry and perhaps those of other industries too.

Sustainable development will only happen if the interested parties work together to define goals, and manage environmental conditions concurrently with economic and social development. If any interest predominates -- industry, government or no-growth proponents -- then the future is less optimistic. We must work in harmony to resolve conflicting tensions, assure sustainable development, and foster continued technological development to meet increasing demands on world resources.

CHAPTER 6

NONGOVERNMENTAL ORGANIZATION RESPONSE

Presentation by
LARRY WILLIAMS
International Representative
Sierra Club

Thank you. I very much appreciate the nice introduction. Sierra Club is a little different than the rest of the groups represented here. We are a different kind of an nongovernmental organization -- not in terms of quality but just in terms of having a different approach. Our organization has been around for a hundred years and was formed for the explicit purpose of pushing public policy to protect the land. In 1892, John Muir brought together a coalition of people who he had been working with over the years to form an organization to protect the Sierra Nevada and other Pacific Coast mountains by establishing and protecting national parks and forest wilderness areas. That was the beginnings of the Sierra Club. Its original purpose was to advocate the preservation of the Sierra Nevada Mountains. It focussed on the Congress and to some degree, of course, on the state of California. Now with 450,000 members and almost a hundred years later, we have an extensive worldwide outings program, the world's largest nature publishing program, and a very small international program which is managed entirely by myself, and some help from Mike Mc.Closky, the Chairman of the Sierra Club.

The question is what does a domestic organization like the Sierra Club -- unlike the rest of the people here who have very extensive outreach capabilities to other countries -- do in the international field that can make a difference in the quality of the environment in the rest of the world? This is not an easy question to answer and it's one that has been of great concern within the Sierra Club.

Sierra Club's international program is about eighteen years old. It started out by focussing on the United Nations, the "great marshmallow", as I call it. But as you might expect, our efforts didn't have a big impact. So four years ago, the Sierra Club moved to Washington and said, "Let's focus on the bureaucracy in Washington instead. It will be more fun and we'll be better at moving public policy in Washington." That's what we did. The Sierra Club gave the task of organizing our new international program to me and a small group of volunteer leaders and said, "O.K., you figure out something to do with it."

The Sierra Club's environmental involvement in changing the way the U.S. impacts the Third World actually goes back a long way. It started off as a law suit by the Natural Resources Defense Council -- in which the Sierra Club was a participant -- to get the Agency for International Development to look at the environmental consequences of their loans to the Third World. Around 1975, that law suit resulted in an out of court settlement in which AID agreed to comply with our abbreviated form of NEPA (National Environmental Policy Act) before they undertake major projects that affect the environment. This action was one of the first efforts by U.S. environmental organizations to affect environmental policies in the Third World. We decided that because we're a domestic organization, our job should be to affect the way our money is spent in the Third World.

In 1985 or so, the Sierra Club joined with five other groups to work on reform of the multilateral development banks' lending policies and to see what we could do about improving the quality of their development projects. As we all know, when you construct large projects -- it doesn't matter in what country -- they often have serious environmental consequences. The World Bank's staff of economists simply isn't well-equipped to look at the social and environmental consequences of their projects. This is something that has to change.

We have also been pressing for legislation to upgrade AID's environmental performance. In 1986, we lobbied through the Congress two pieces of legislation effecting AID. The Tropical Forest Preservation Act directs AID to avoid any actions that would encourage or contribute to the distribution of tropical forests. The other law is the Biological Diversity Preservation Act which earmarked $2.5 million for the preservation of biological diversity. This year, AID has spent $4.5 million and in February 1989 will spend another $4.5 million.

The summary of activities that AID has undertaken with this money is quite impressive. This new idea at AID, that it should be concerned about the environment is catching on. Certainly, they had been concerned about planting trees and designing better agricultural methods all along, but the broader social and environmental implications of long term sustainability hadn't really filtered into the agency's thinking. These laws have gotten the agency to think of the broader consequences of what it was doing. I think it's working.

In 1987, we began pressing the Congress to pass the Africa Famine Relief and Recovery Act. The bill's intent is to try and break the famine-draught-starvation cycle in northern Africa. It gives greater attention to sustainable agriculture and sustainable development in Africa. The Africa Bill, as we call it, has passed the House of Representatives as part of the Foreign Assistance Act and is permanently bogged down in the Senate. It passed out of the Senate Committee and got stuck in no man's land, in the land of indifference; I presume it will stay there. Last year, the Appropriations Committee funded the bill even though it had not become law and this year, the Committee has already earmarked $500 million for the Africa Fund. AID is now trying to implement the Africa bill, even though it is not a law. The Appropriations Committee has established spending targets of 10% of this $500 million on natural resource preservation and restoration efforts; 10% on family health; and another 10% on family planning." The implementation of this bill is slowly starting to take shape at AID which is, I think, another positive sign that attitudes are changing toward development.

At the meantime, we have been busy on the Capitol Hill with the World Bank and the other Multilateral Development Banks in seeing what we can do to put pressure on them to improve their lending practices. This has been a very successful campaign in which the Treasury Department, the State Department, and AID have been very strong allies in looking at the World Bank and other regional Multilateral Development Banks projects to see what kinds of impacts they are having on the environment before these projects come up for vote. This is not an easy task because Bank projects are designed and implemented in secret. Therefore, you have to nose around the dust bins and the back allies of the Third World in order to find out what the World Bank is doing in the Third World when their headquarters are right here in Washington.

We would like to see that change. We feel that a country like the United States and other donor countries, have a right to know what they are voting for well in advance of the funding request coming to a vote before the Bank's Board of Directors. The member governments should be able to assess the environmental consequences of the projects proposed by the Bank and to effect changes if need be. Not just to oppose loans, but hopefully, to help the banks avoid and mitigate the worst of the effects of proposed projects. More importantly, the banks should be getting that kind of information to the people who are impacted by these projects. As it is today, usually the local NGO's have no idea that these projects are under consideration, and very often the environmental offices of the borrower countries don't know either. So, the opening up of the development process and thereby empowering the NGO's to become effectively involved is what it's all about.

In 1986, we published a book called *Bankrolling Disasters*, which has been widely circulated. It is a citizen's guide to the multilateral development banks. The purpose of publishing it was 1) to tell people how the World Bank and other regional banks operate; 2) to tell how they might be involved in pressing for Bank policy changes in their own country; and 3) to get themselves into the dialogue of that development process. I think the book has helped to raise the level of conscience around the world about the Multidevelopment banks and their environmental impacts.

Our goal, as an activist organization, is to help empower the NGO's. We do this by getting Bank projects to the NGO's and thereby connecting them to the development process in their own country. The Sierra Club's hundred years of experience in grassroots organizing can, hopefully, be put to use in the Third World. We are now working with the African Development Bank on an NGO Outreach Project. This will be the AFDB's formal effort to work with NGO's.

Last year, we worked with the Inter-American Development Bank to bring seventeen NGO leaders to Washington D.C. to talk to the Bank directly about the environment. It was a very successful dialogue. As the result, the Inter-American Bank, much to its credit, is making plans to change its policies so as to take into account these concerns. This outreach to NGO's is beginning to happen at the World Bank, although a little more slowly. We have recently been approached by the Asian Bank. They are saying, "Hey, don't forget us. We think this is important too. What do we do?"

I should probably stop here. I hope I have given you a little bit of a flavor as to what we're going, and where our interests lie. As you hear from other speakers, you will see that ours is a very different approach. The other organizations represented on this panel have resources outside of this country to draw upon, which we do not.

Presentation by
EVELYN WILCOX
Marine Management Consultant
World Wildlife Fund

First of all, I want to thank Legacy International and YES for inviting me to come here. This has been a wonderful opportunity. I was particularly moved by the speakers this morning -- our future leaders.

It is very difficult to describe the urgency of the call to sustainable development in just a few minutes. In my prepared remarks, I have tried to address the World Wildlife Fund's response to this call to action which is to preserve wild lands and wildlife.

Today, World Wildlife Fund is the leading private organization working worldwide to protect endangered wildlife and wild lands. It comprises an international family of twenty-three national organizations with headquarters in Switzerland. The next question that arises here is, "How does the World Wildlife Fund translate the words 'sustainable development' and 'biological diversity' into action?" In order to respond to this question, I have listed five guidelines. These guidelines, I believe, have resulted in the preservation of critical habitat for endangered and threatened species throughout the world. (I am sure you are aware of some of these marvelous species -- tigers, elephants, sea turtles, endangered plants, and monarch butterflies, to name a few.) At the same time, these guidelines have improved the quality of life of the people who share some of this habitat.

They are as follows:

1. Foster indigenous leadership to build enduring institutions for conservation and protection.

2. Build a strong scientific base for conservation.

3. Focus on ecological systems where the greatest biological diversity is found.

4. Work with local people to develop a conservation ethic based on local culture, causing conservation to rank high among national priorities.

5. Link the preservation of biological resources with the needs of the rural poor.

To illustrate specifically how ideas and guidelines are translated into action, I would like to use the remainder of my time to tell you, very briefly, about two World Wildlife Fund projects in the Caribbean. I also hope that Andrew Simmons from St. Vincent is here this morning because these projects perhaps will answer some of his concerns.

The first project is located along the southeast coast of the island of St. Lucia in the eastern Caribbean and is part of the World Wildlife Fund program in wild lands and human needs. This program, initiated in 1985, was specifically designed to try to integrate the management of natural resources, the preservation of biological diversity, and the development needs of human populations in the field. In the case of St. Lucia, the idea was to sustain the renewable resources of the southeast coast -- that is, the marine life, the offshore islands, coral reefs, lagoons and bays, mangroves, beaches, coastal lowlands, headlands, and interior uplands -- and also to sustain the quality of life of the people who live there by working with local people and meeting their economic and social needs. In this instance, World Wildlife Fund has been working with the Eastern Caribbean Natural Area Management Project (ECNAMP) which, in turn, shares decision making and management responsibilities with the local communities. The local communities work with ECNAMP to select areas for preservation, to set up boundaries, and to restrict the use of ecologically important areas such as mangroves and seagrass beds.

I am going to give you a quick example of how this works. The World Wildlife Fund works with the fishing community through its local organization. One of the ways in which the community has benefitted and tries to benefit the local people is to finance a building where the fishermen can store their motors and fishing gear. The community has also helped them secure legal rights to use the landing and marketing area. In just a few years, the fishermen's standard of living has increased substantially. Six years after the offshore Maria Islands were formally designated for protection, the fishermen have stopped collecting sea bird eggs and have honored a no-fishing zone along the island.

After working in marine parks and reserves for a number of years, I would like to make a personal observation. The approach that was just mentioned is much more effective than setting up boundaries and putting people in there to enforce those boundaries without talking to any of the neighbors. It works and is working in St. Lucia.

The objective of the second project is to establish a marine park in the Caribbean waters of Haiti. This is a new project compared to St. Lucia; nevertheless, the objectives are very similar. The idea is to preserve the rich biological diversity of the coral reef systems surrounding three small islands in the Bay of Port au Prince. The work of building enduring local institutions is just beginning. At the moment, World Wildlife Fund is working with The Haiti Hotel Association, The Dive Club, and other interested individuals. The biological, economic, and cultural field work was only completed a month ago, but the results are quite astonishing. Our biological team has identified over seventy species of sponges and more than one hundred species of fish in just three weeks of diving.

The fishermen have already told us that they know their fishing grounds are being depleted by overfishing. They have also said that they would enthusiastically work with us on the park reserve concept if we would help them improve their standard of living. They want help with their fishing cooperative and they want to learn to read. They say they are living on the edge of survival and can't afford to have us limit their fishing -- even though such limitations will eventually replenish the fish population. A marine park at the site could protect biological diversity; it might mean the resurgence of the regional beach hotel economy as well as improve the lives of the fishermen who use the area. We believe that the success of this project will rest on our ability to understand and to meet the real needs of the fishing community. To let community involvement grow and develop at its own pace takes time, but the rewards are significant.

I would like to close with a few thoughts. I have been wrestling, just as you have, with the concept of sustainable development and biological diversity. Many of you are probably tired of hearing these words -- at least I am; but we live with them. And so, I came up with the following thoughts:

Words contain ideas, ideas lead to policies, laws, and actions by governments, private organizations, and individuals. The idea behind the words "sustainable development" and "biological diversity" has been with us for a very long time. The idea is to recognize that the quality of life for human beings and, in some instances, their very existence depends on conservation of the natural resource base while development goes on. Development in this context can mean anything from building whole cities to establishing marine parks.

As nations and communities choose their policies, laws, and actions for the remaining years of the 20th century and the beginning of the 21 century, our challenge, as environmentally trained and aware citizens of the earth, is to make these ideas the rule and not the exception.

Presentation by
PETER SELIGMANN
President
Conservation International

This conference has been very interesting to listen to because of the different approaches that nongovernmental organizations -- or actually private service organizations -- can take in trying to affect life on this planet.

Let me explain a little bit about the organization I work for. It is called Conservation International, and unlike the Sierra Club which has been around for one hundred years, we have been around for only one year; and unlike the World Wildlife Fund and CARE which have products all over the world, we only have products in a few places. I am not certain whether this is a rationalization on our part, but we are doing that intentionally.

First, a brief history about Conservation International. I think that if you understand a little bit more about the people that make up the organization, you might understand more fully our approach and strategy towards conservation. We were the international division of the Nature Conservancy, and our approach in that division was simply that the decisions about conservation and development could not be made separately. The decisions had to be made by local communities and local people, which meant that the authority for deciding what should happen had to go to the local community. This implied that both our board and our staff had to be international. It really didn't suit the Nature Conservancy as the most effective U.S. organization to give the authority and the direction overseas, and it became clear to both of us that it was important to set up a new organization.

I look at this group here and see lots of potential. There are people from many different countries interested in the idea of linking conservation and development -- people who probably, after this week, understand that they are one and the same. You can't distinguish between conservation and development. They are different sides of the same coin. It's life, it's emergence, it's part of the social fabric of any nation. If you don't have the resources to conserve, you don't develop. That gives you some idea about where this organization came from.

We just got through a few days of planning which you probably do more of when you're starting an organization than later on. We're revising our mission statement which states as its goals: "To build sustained life on earth, biological diversity, ecosystems, and ecological processes by building local capacity." It means that the local capacity and the ultimate mission of sustaining life on earth can not be separated. As an organization that is relatively small, we now have fifty employees. Our philosophy is to have our head in the sky and our feet in the mud. We feel that the head in the sky is necessary because you want to see the forest, but the feet in the mud is essential because that's where reality is. I think everybody has pointed out eloquently, that the local woman looking for the best species of trees is going to be much more effective because she's there, sees the soil, is used to the climate, and understands when the locusts come -- and that is the basis for reality.

Integrating conservation with development is a very complex problem. It is complex because the factors that affect conservation are enormous -- people, population, food, governments, or bureaucracies -- every single hurdle you can throw in the way of a successful blending of conservation and development is there. And so, the solutions have to be just as complex. I come back to that because, since the solutions are so complex, we as an organization are trying to focus on a few places. We are trying to assist in the design and development of a successful example of an ecosystem conservation effort where the local communities are benefitted by the conservation of resources. In order to do this, we picked a few countries and we now work in Bolivia, Costa Rica, Mexico, Guatemala, and perhaps even in Peru and Nicaragua in the near future. We're trying to look at the whole issue of how to develop the capacities within a country to effectively address sustainability of resources. We decided not to work at the national level because what happens in the United States at the Grand Tetons or Yellowstone is not affected as much by Washington, D.C. as it is affected by the town that's nearby. So what we're trying to do is to start at the local level and have a design of a program in the hands and the mind of the local people and have from that point emerge the structure at the regional, national, and eventually, at the international level.

Let me talk a little bit about Bolivia because it's the country where our program is most developed. It's a program that I understand very well and it is one that I think already has had international ramifications. In July of last year, we as a young organization, worked out an agreement at the request of the Bolivian government to exchange debt for conservation. We purchased Bolivian debt which was selling for ten cents on a dollar and agreed to exchange the debt for the Bolivian commitment to establish a four million acre region as a biosphere reserve in Bolivia -- plus the agreement to exchange the debt that we purchased for local currency to finance the management and development of that region. It was a very insignificant amount of money. I think we purchased $650,000 worth of debt and paid little less than $100,000 for it. We didn't even get a good deal on it. The price went down to nine cents the next day. We made a lot of mistakes.

Fortunately, other organizations such as the World Wildlife Fund and Nature Conservancy have been improving upon the strategies for doing debt-for-conservation agreements, and we're getting better as we go along. The important thing was the linkage. It was the linkage of an economic condition of a nation with the conservation of its resources. This approach wasn't great wisdom on our part; it was great wisdom on the part of the Bolivians because the success of any effort is obviously dependent upon the local community, the local people, the president, the Indians, the foresters, and the planners. Those are the people who said: "Let's do a transaction where you can reduce our external debt, and the pressure that we are under to clear cut a mahogany forest. Give us the opportunity to try to develop a long-term horizon for the use of all of our resources." Of course, that's a very pretty picture and it was very well received by the press. The work began the day after the deal was signed and is now ongoing and may be ongoing for a hundred million years. I hope we can have a shorter time frame for measuring success.

The area that we talked about establishing as a biosphere reserve is a spectacular region. It is a good region to work in as an experiment because it's isolated. If you know Bolivia, there is the Alto Plano and then there is the Amazon Basin -- completely different cultures, only one dirt road that runs through the place, very few people, and very little pressure. But the pressure is coming. The resource used is timber, extracted by clear cutting the mahogany. There is cattle grazing, some farming, and cocaine processing -- which is fortunately diminishing rapidly because the cartels are trying to move all that stuff up to Colombia. The people there are the Chimane Indians, an indigenous group of hunters and gatherers; and then the cattlemen, the foresters, and the local community. What we have done, as the newly appointed advisors to the Bolivian government on conservation, is try to design a process for establishing the blend of conservation and development and that, I think, is the most important thing to do. There has to be local control and that's what it is. There is a commission of foresters, cattlemen, and community people that have just taxed themselves. They are taxing all the timber taken out of the area to finance the planning, conservation, and development of the region. That is the most significant thing that happened. This is much more important than the debt-for-nature agreement. The debt-for-nature agreement was international, but taxing is local and that's where the future of that region lies.

The opportunities are endless. We can spend every penny in one place or we can shift all of our resources to a thousand places. What our organization is trying to do is to demonstrate some examples by intensively focussing on them, and staffing them so that at the end of a few years there will be some highlights that others can look at. The technology is not even there.

To understand what has to be done in conservation in Bolivia, we have to set up vegetation maps. There are a handful of botanists in the country and probably the same number of zoologists. So, the whole effort is focussed on training people, building institutions, designing programs, and just providing ongoing, thoughtful, and complete support for one program.

We're doing the same thing in Costa Rica in an area called La Amistad which covers ten percent of Costa Rica. Again, it involves forestry, hydrology, resource extraction, conservation, many governmental authorities, and no communication. Now, we're working there, financed by another debt-for-nature transaction. We're developing a commission to integrate all the different uses. So, just as indication of what one organization is doing, that is our approach. There are many organizations involved in this. If the anthropological, developmental, and socio-economic sides are not addressed as carefully as the conservation side, all we will have is one failure after the next. And that's why, this new organization in any case, has in its mission that we're searching for ways that development and conservation can go hand in hand.

Good luck and thank you very much.

Presentation by
REMKO VONK
Acting Director
Agriculture and Natural Resources
CARE

Thank you very much. First of all, I would like to specify a few things. I am not going to describe what sustainability is. I think it has been described enough, although most people are still confused about it, and I don't think I can explain it better. But I would like to talk more about CARE.

I represent CARE here at the nongovernmental organization forum. I don't like that term because NGO spells what we are not -- the term does not tell us anything about what we are. I think the title "private service organization" would be more appropriate. CARE has been involved in the area of development since the Second World War, when the European nations started the reconstruction efforts. Once that work started showing some results, CARE moved to the third world countries. At the moment, it is working in seventeen African countries. I will focus my presentation on East Africa.

CARE is still involved in relief, but in addition, it is involved in health efforts, and in improving the capabilities of local communities to generate income. Over the last eight years, CARE has also been involved in agricultural and natural resources projects in Africa.

We consider it our strength that we work with both people and governments at the local level although we don't have a continental mandate. It is very difficult to live up to statements such as "We are going to stop desertification." Given for instance, the size of the Sahel, the problem is immense. The entire Sahel is just too large of a region of focus so we try to concentrate our efforts in places where we can be effective. This means very often that we work in a specific area on a small scale with local people. We find that those small areas can be very meaningful and our small scale, local approach often produces results that can be extrapolated and expanded upon.

Development is about change and that is what we are trying to achieve. Fortunately, change and development occur without the existence of CARE, U.S. AID, the World Bank, YES or any of these organizations. People change and people develop and all we are doing is trying to help them in the process. If we keep this concept in mind and use it as the starting point in our approach to development, we both enter and exit the change process as an outside organization. We try to contribute to people's developmental process without becoming permanent entities in their development.

People respond to a changing environment. As outsiders, we often see Africa as a continent in need of assistance, just waiting for someone to come along and help it. We forget that people do respond intuitively to situations that confront them. People respond to changes in the political systems, national boundaries, climate, and population. Unfortunately, people without resources do not always have the luxury to respond in the best possible way. They often respond at the cost of the few resources they have available -- the natural resources. What results is often an unsustainable situation. The outsider often sees this unsustainable response as deforestation -- as the disappearance of tropical forests, the vegetation covering around the Sahara region -- and the solution often calls for reforestation. The greening of Africa and similar efforts are often mentioned as a response to the disappearance of the forests. We believe that reforestation has to be done, but does it really have to be done in the forests? Reforestation actually means putting forests back in place.

I would like to present some interesting data about reforestation that will put things in a somewhat different perspective. Statistics have shown that over fifty percent of the wood that is being harvested in Africa is not harvested in the forest but on farms. Over eighty percent of that wood is harvested not by foresters but by women who collect firewood; and over ninety percent of the wood is burned.

Now, this information demands a completely different approach to sustainable development and consequently, to reforestation in Africa. It means that we have to focus on reforestation on the farm level -- where wood is gathered, the women who gather it, and the part of the tree they harvest. A woman does not go out with a chain saw to collect firewood by cutting a tree with a very large diameter; she goes out with a machete and cuts up some branches from a small diameter wood. These three simple facts have changed CARE's whole approach toward environmental degradation in Africa.

People who think globally might argue that we have to look for alternative fuel sources so people won't have to cut trees anymore. It is good to keep in mind that in 1984, Tanzania spent over ninety percent of its foreign exchange on petrol. Many countries simply don't have any alternative and therefore, they have to continue cutting wood.

Another response that often confronts us is the notion of a miracle. I would like to call for a "non-miracle." There have been enough attempts -- miracle attempts -- to solve deforestation or environmental problems. One example which is not really related to forestry but that I would like to share with you is the introduction of the Nile Perch to Lake Victoria in the early fifties. It was believed that the Nile Perch would be better than fish native to the lake, because it yields more meat. Currently, the Nile Perch is just about the only thing that swims around in the northern part of Lake Victoria -- a lake that is larger than my home country, the Netherlands. The effects of its introduction have been disastrous. The fish can not be sun dried; it has to be smoked to be preserved. As a result, anything that can be burned around Lake Victoria has been cut to preserve the Nile Perch so it could be transported to the cities. The environmental impact of this decision has been tremendous, not to mention the impact the Nile Perch has had upon the wildlife and the other fish in the Lake which have long since disappeared.

In southeast Asia, the Leucaena has been introduced on a very large scale as the tree that would solve all problems. It is an incredibly fast growing tree; it is as if you drop a seed in the ground, turn around and look back and there is a tree. There is a little insect called the syllid that is found on this tree. It is causing problems for many small farmers who have adopted the tree in their efforts to reforest their farms in order to earn an income. We have to pay a lot more attention to the indigenous resources that are available and have been tested over hundreds of years by generation of people.

In the region of Kenya where I worked for three years, there is a local tree species that did not show up even once in three independent literature data base searches, although it is the species most commonly used by farmers on their farms. This species not only occurs in Kenya, but it is also very common in Uganda and Rwanda and it is now one of the most commonly used species in our project. This tree, the Markhauia Lutea is unknown to us, but is very well known to the farmers. Thus, we have to forget our biases. When we go in and try to work on sustainable development, we should do it from the perspective of the people we try to help and not just from our perspective.

What can we expect from a sustainable developmental approach in the agricultural and natural resources field? We can expect more sustainable cropping and grazing systems, but also more communities organized around the goal of sustainable development. Sustainable development is getting people out of the poverty cycle. A very important first step is helping people appreciate the fact that their own local resources can be used in a sustainable way.

How do we measure sustainable development? There are few indicators of sustainable development and very often they are negative indicators. It is very easy to measure something that is not sustainable. The dinosaurs were not sustainable; we have good proof of that. But are some of the developmental efforts that we are trying to put in place sustainable? I think the efforts that we are making to involve people to the maximum extent, in the definition of the problem, the design of the technology, and the evaluation of that technology is the best first step to sustainability. If people are not involved in those three steps, then the likeliness of sustainability will be reduced. If people are not involved in the design of a project, then it is unlikely that project's activity will be sustained by the people. And if people are not involved in the implementation of the project, it is not likely that they will sustain it after the external agent pulls out. If people are not involved in the assessment of the success of the project, and therefore not involved in the refocussing and the redirection of the project, then it is not likely to be sustainable. So a good indicator of sustainability is participation. Of course, there are dozens of examples that will tell you that the opposite is true but in general, it's a pretty good indicator.

Recently, I went back to a project that I had started in Africa. There, I found an old woman experimenting with various nitrogen fixing trees in her hamla -- her crop land -- with more success than the scientists accompanying me from the International Council for Research in Agro-Forestry had ever seen. She managed to find management methods that were much more workable for her than the scientists could have thought of themselves. She also had much better indicators for success: "Well, I can put my children here in school. I don't have to send them to the city anymore. I can feed them here because I can keep them and because of that, we can all work on the farm together and there is a future for them on the farm." That, for her, was the indicator of success. It was not the amount of nitrogen fixed by those trees, it was not soil cover, it was not the diameter of the tree or whatever. She had a completely different indicator of success.

Sustainable development means giving to people whose development we interfere with every opportunity to find, to examine, and to experiment. We have to help them develop new approaches, take them out of the downward cycle they are trapped in, and give them the opportunity to step back and analyze alternative approaches. After all, when you talk about sustainable development in Africa, it's the African, him or herself, who knows best how to approach it. In Africa, sustainability starts at the level of the individual as far as we are concerned in our approach.

And with that, I would like to close. Thank you.

CHAPTER 7

FUTURE LEADERS' RESPONSE

Presentation by
LAURIE MACE
Conservation & Protection
Ontario Region
Environment Canada

I would like to put forward to you today that young people in Canada are in a unique position to affect and promote sustainable development because the implementation of this concept -- sustainable development -- is on Canada's social and political agenda.

Let me make note of some of the unique features of Canada's social contexts to perhaps explain why this might be and then give a few examples of how Canadians can take advantage of this opportunity.

Firstly, most people of my country are in no danger of running out of water, or habitable space, or exhausting their forests, fish, or land resources, or suffocating from industrial emissions. However, there is much evidence of declining environmental quality. Foresters have to go further to find good quality timber, farmers are adding more chemicals to make up for losses in soil quality. Unlike many countries, Canadians are in the enviable position of being concerned about the quality of their natural environment rather than the quantity.

Secondly, Canadian citizens have demonstrated that they recognize the direct relationship between the well-being of the natural environment and our own well-being. Our growing appreciation and interest is illustrated by the fact that environmental issues are taking up more space than ever before in Canadian newspapers. This interest is verified in public opinion polls which show that Canadians are concerned about the quality of their environment -- in fact more so than any other issue. Furthermore, they have expressed a willingness to pay. For example, three to four years ago, polls showed that 90% of Canadians believed that every major economic project should be demonstrated to be environmentally sound before it can go ahead. Even after being told that stricter environmental laws could result in increased prices -- money from our pockets -- 83% of Canadians expressed a willingness to pay that price.

Thirdly, young Canadians have as their example the leadership and ability of politicians, academics, industrial executives, and environmental organizations who are working together in partnership.

I would like to take a moment here to explain specifically how Canadian political, industrial, and environmental leaders have responded to the challenges outlined in the Brundtland Commission Report. And I challenge all countries represented here -- and particularly our host nation today, the United States -- to respond in like kind.

There is a voluntary association of Canada's highest ranking elected officials called The Canadian Council of Resource and Environment Ministries (CCREM). This Council is made up of environment and resource ministers from ten provinces and two territorial governments and the federal government. In a desire to respond directly and immediately to the Brundtland Commission Report, CCREM set up a special task force made up of seven of Canada's environmental ministers as well as ten other respected academics, senior leaders of Canadian industry, and Canadian environmental groups. This task force was called The National Task Force on Environment and Economy -- "environment and economy" being Canada's buzz word for what we are referring here today as "sustainable development" -- and was asked to bring together ideas and recommendations for the promotion of environmentally sound economic development in Canada. It has, in essence, become an endorsement of the Brundtland Commission Report -- at the highest level in the country.

The task force arrived at six major recommendations. I emphasize that these were arrived at through the consensus and agreement of a small group of Canada's highest ranking leaders from a number of sectors of society. I am taking the liberty of restating five of those recommendations as direct challenges to each of us. (Although I will speak of these in terms of my country, Canada, perhaps we can each listen to the following comments in terms of our own nation, our own life.)

1. INFORMED DECISION MAKING

Besides the incentives of environmental regulations, the market economy, with its energy and technological resources must contribute to the solution. Together, we must improve our ability to forecast the environmental impacts of our actions. We must further develop methods for the evaluation of natural resources. Informed decision making can also be encouraged through the use of concrete examples or demonstration projects which prove that integrated economic and environmental planning can work.

2. LEADERSHIP

Government must integrate environmental input into decision making at the highest level. Industrial associations can encourage codes of practice and performance standards for specific industries. Business associations can also contribute to the environmental awareness of small- to medium-sized firms which may otherwise lack the resources to retain their own environmental specialists. And environmental organizations must continue as leaders in their early recognition of environmental issues and their unique position to foster public debate.

3. ROUNDTABLE OF SENIOR LEVEL MULTISECTORAL DISCUSSIONS

Modelled, in a sense, after the National Task Force itself, each Canadian province or territory has been challenged to form a multisectoral Roundtable on Environment and Economy as a permanent forum in which all sectors can meet to cooperate to influence planning at the earliest point and at the highest level. And most importantly, the chairmen of each rountable would report directly to the first minister of the jurisdiction in which it is formed. The members of each roundtable will be those who exercise influence over policy and planning decisions and whose various areas of expertise can assist debate. The idea is that these forums will exert influence on the basis of their credibility, their independence, and their access to the views of important sectors and levels of society. (I am happy to report that to date, at least two of Canada's provinces have already taken steps to initiate their own roundtable.

4. RECOGNITION OF OUR INTERNATIONAL RESPONSIBILITIES

Canada is committed to sharing its expertise and to learn from others in the international effort to attain sustainable development. In its bilateral aid decisions, Canada -- for example through the Canadian International Development Agency (CIDA) -- is requiring environmental impact assessments of all projects financed by them. Canada is also continuing its strong support of the United Nations Environment Programme.

5. COMMUNICATIONS AND EDUCATION

By soliciting the support of each province and territory's education minister, the environment ministers can upgrade education, especially at the elementary and junior high school level. Environmental economics and, in particular, the concept of sustainable development can be incorporated into high school and university studies. There we have it:

- informed decision making;
- leadership;
- roundtable discussions;
- recognition of our international responsibilities; and
- communication and education.

And with this, a final point: Why is it that knowledge of how to use the environment productively without causing long-term deterioration is increasing, but that we are far from putting all this knowledge into action?

The most likely explanation is that the problem of maintaining environmental quality is as much "individual" as it is technical or economic. The people of Canada, by their actions and by their votes, determine the level of "stress" not only on the environment, but also on the decision makers! The appropriate decision maker, however, is not always someone else. Each of us -- as individuals, as consumers, as voters, as members of a community -- is contributing to the stress on the environment and each of us can respond in ways that will reduce or modify that stress. Ultimately, Canadians will have the environment they deserve.

This conference is subtitled "A Call to Action." I call on each one of you to find these incentives for change:

Strengthen your data base.
Share information more effectively.
Explore the true value of your environment.
Indicate new directions by your example.
And, perhaps most importantly: Establish *new* measures for success.

Thank you.

Presentation by
WALID MOHAMED
Executive Director, YES Egypt
Former Executive Board Member
Arab Office of Youth and Environment

Ladies and gentlemen, dear guests, participants, colleagues, and friends. As I am representing the Mediterranean region, I would like to give you an overview on the region, the sea, the people and their activities.

What do we mean when we talk about the Mediterranean Sea? (Hundreds of things at the same time. It brings to mind not only its natural view, not only one civilization, it brings all of these.) What does the Mediterranean Sea mean to the more than 250 million persons living on its watershed?

It means fishing -- more than 30% of the inhabitants make their living through commercial fishing. Their share represents 1% of the world's production, but it represents 4% of the commercial value.

It means tourism. The Mediterranean region receives one tourist out of every three in the world; that's 90 million tourists per year.

It means life or death.

The Mediterranean Sea is the oldest and largest landlocked sea, with eighteen countries and 400 million inhabitants. As a result, it suffers from many problems:

85% of the sewage from the coastal cities flow without treatment into the sea.

Rivers drain pollutants into the sea, including 600,000 tons of detergents, 320,000 tons of phosphorous, and 800,000 tons of nitrogen per year.

Over 20% of the world's oil pollution end up in the Mediterranean.

The Mediterranean is dying.

The Stockholm Conference of 1972 is the starting point for organized world to save the old sea's life.

In 1975, for the first time, eighteen countries gathered in Barcelona. They accepted the Mediterranean Action Plan (MAP), which then became the Blue plan, followed by the Priority Action Projects (PAP).

Also starting in 1972, youth movements began to change and be more environmentally oriented. Environmental youth movements started initially in Scandinavia and northern Europe, although it took some time to come to the Mediterranean region through the southern European countries. It took seven years to come to Egypt, where the first youth environmental organization in the Middle East and the surrounding Arab countries was formed.

Until this time, the two regions had not worked jointly at the youth level. Starting with the "Mediterranean Youth Conference on the Environment," in 1985, Cartagena, Spain, seventy participants from eleven nations accepted the Cartagena Declaration which included the following needs for a Mediterranean youth organization:

Promote youth activities,
Exchange experiences and resources, and
Work together as one region.

In response to that statement, youth representatives from the same countries that participated in Cartagena, met in Athens in 1986. They successfully established Youths for Environment and Service (YES), and ratified its constitution.

Since that time, a higher level of communication and cooperation has been achieved. Regional projects such as beach cleanup have been implemented; and local projects such as a cleanup campaign, water treatment program, and health care project in a rural area in Egypt have been started. I considered this project as a good model for grass roots projects which apply the concepts of sustainable development. With the help of community residents, youths and senior citizens, the local council, and private corporations, YES Egypt removed two large garbage dumps, and set up a garbage delivery system in this area for the first time. By the end of this project, we will have accomplished the main goal of improving the community's quality of life by improving the environmental conditions and by raising the health level among the people.

Simultaneously, on another level of work, Mustafa K. Tolba has succeeded in forming the Senior Womens' Committee on Sustainable Development, and later on the World Commission on Sustainable Development, who defined the term, and published the report *Our Common Future*.

In the context of the Mediterranean environment, I believe that sustainable development is the optimal solution to help maximize the benefits and minimize the environmental damage, provided that the damage can be redressed.

In some cases, even the maximum benefit is not sufficient to meet the needs of the people. The solution to a problem like this one calls for people who are willing and able to sacrifice.

I believe that the only group of people who can handle these problems, who can think in new ways, and who are able to sacrifice, regardless of their origins and the state of development of their countries, is the youths in the whole region.

So why youths? In fact, youths between eighteen and twenty-five years old are 46% of the total population in the region; this percentage means 170 million persons.

They are widely spread all over the area.
They have enough enthusiasm to make the effort to change.
They care about the future they will live in.
They seek better quality of life in a clean environment.
They are the only group willing to sacrifice so much of their life to ensure better conditions for the coming children, the coming generations.

"...You must carry your oar on your shoulder, walk and walk, until you find people who ignore the sea, who do not put salt on the food they eat, who have nothing to do with the boats..."

Homer, ninth century B.C.

Thank you.

Presentation by
ANDREW SIMMONS
Ministry of Education
President of JEMS Organization
St. Vincent and the Grenadines

Moderator, distinguished guests, fellow participants, ladies and gentlemen:

Special thanks to Legacy, UNEP, and YES for giving me the opportunity to participate in this prestigious conference on sustainable development. I have had the opportunity to live with the world's most dedicated conservationists over the past fifteen days. Although we were representing diverse cultural, political, linguistic, and racial backgrounds from around the world, we were able to break down these barriers and discuss our specific areas of concern -- that of saving our environment for future generations.

Some of us may be confused with phrases such as "the role of future leaders" or "leaders of tomorrow" as they relate to the issue of sustainable development. Do they represent a conspiracy by the adult world to keep us in check? I hope not. We have taken the initiative to participate in this venture so that our children will inherit a pleasant and clean world free of toxic and nuclear waste.

Young people perceive the situation in St. Vincent and the Grenadines -- and other Third World countries -- as chaotic. The future is grim for young people there because political independence left behind a retarded economy which had been exploited for hundreds of years by our colonial masters. The island is characterized as the second poorest state in the Caribbean region. We also inherited an educational system which does not address the developmental needs of the country necessary to carry it into the twenty-first century. This educational system produced illiterates. According to the Fordham Report, the incidence of illiteracy is estimated at 30% to 50% of the adult population. The island has the highest rate of teenage pregnancy within the Caribbean region. For every three live births, there is a mother under nineteen years old. Unemployment is rampant. It is estimated that between 30% to 40% of the working population is without work. However, 60% of the youths may be without work.

We must not forget that poverty in the rural communities breeds other social problems, such as malnutrition, dilapidated housing conditions, and a landless class.

The island is situated geographically within a belt where there is a constant threat of natural disasters -- hurricanes, earthquakes and volcanic eruptions -- which, within the past decade, has frequently destroyed the fragile agriculturally based economy of the country.

Over the past ten years, youths throughout the Caribbean region, especially in St. Vincent and the Grenadines, have developed strategies and initiatives at the community level to counter these harsh problems. These solutions emphasize the preservation and conservation of the environment as a medium to arouse social change.

I have two questions to ask:

1. How can we stop women from cutting the trees in the forest for fuel when the very existence of their families depends largely on the food cooked with these logs?

2. How can we stop the farmer from using these severely toxic chemicals on his farm when he has been convinced over the years that DDT will rid him of locusts and other pests, thus improving the quality and quantity of the yield, which in turn means more money in the home to purchase food and educate his children?

As environmentalists and developers we have to be sensitive and aware of the dynamics involved in these issues. We have to create practical, low-cost, successful alternatives. The answer to these problems from a Third World perspective is sustainable development.

The JEMS Progressive Community Organization -- a community organization based in St. Vincent and the Grenadines -- has developed a very successful program of sustainable development. The organization conceptualizes development as a process in which people are at the center or axis. It enables people to make decisions on the specific course of development their community should follow, thus enhancing the mobilization of community people to work for their own development.

Education is the most important component of the JEMS Program. A full-fledged institute called the JEMS Institute for Popular Education was created in 1985. Its goal is to eliminate the severe illiteracy problem; develop employable skills which lead to employment creation; and promote training in family life education, environment, and community development issues. The curriculum of the institute is developed by the management, participants, and the facilitators within the program. Women's issues are taught as a topic within the institute because of the important role these women play in the development and implementation of the adult education program and community environmental projects.

The organization has developed a community education and development program which reaches over ten thousand people in fifteen villages. The organization uses popular theater as a community teaching strategy. The theater takes advantage of the cultural experiences of the people and uses them to build awareness of environmental and social issues, thus motivating them to do self-help work on community projects.

Numerous projects were developed over the past ten years such as village water projects, beach cleanup projects, reforestation projects, wildlife protection and conservation projects, and solid waste management projects. The organization has developed a model farm to train farmers within the community to have good environmental practices in farming.

I have been associated with the JEMS Progressive Community Organization for ten years both as founder and current president. The organization has demonstrated to the world that young people are initiators and developers of the concept of sustainable development. I have coordinated a very successful solid waste management project on the southern portion of St. Lucia, costing over $200,000 EC using this very model.

From June 26 to July 1, 1988, the Caribbean Conservation Association held an environmental awareness seminar among leading environmentalists throughout the region to examine the JEMS model as part of the entire regional environmental strategy.

Internationally, the work of JEMS is highly respected by UNEP, World Literacy of Canada, and many others. This is a living model for sustainable development for Third World countries at the community or grass roots level.

In conclusion, I recommend that we continue to develop the concept of sustainable development in a realistic and practical manner within the Caribbean and Latin American regions. I recommend that the following be implemented:

A. U.S. multinational corporations and individual governments which are involved in the illicit exportation and dumping of toxic waste in the Caribbean and Latin American regions be charged by the United Nations for committing a crime to humanity.

B. Multinational corporations which have invested in the Caribbean and Latin America return a portion of their profit to support environmental development initiatives at the community and rural levels.

C. Funds that are directed by the superpowers to support civil disturbances in the region be redirected to finance sustainable development initiatives with emphasis on support services for rural women.

D. Funding institutions such as the World Bank, Inter-American Development Bank, and so forth, *should not* fund projects in developing countries unless thorough environmental assessment and analysis proves that their effect on the natural environment is minimal throughout the life of the project.

E. Agencies involved in propagating the concept of sustainable development should create forums like this for young people to share their experiences and develop awareness of the effectiveness of sustainable development for the existence of the human race.

Thank you.

Presentation by
SUSAN DRAKE
U.S. Presidential Management Intern
Environment Department
The World Bank

What will it take to enable today's youth and young professionals to cope with the burgeoning, complex environment and development problems which will affect the very existence of the human race as well as the existence of other creatures?

A few weeks ago, I sat in a World Bank meeting where men and women of all races, ethnic, and religious backgrounds discussed the issues which will have to be addressed in the near future -- issues which have been explored in the Brundtland Commission Report entitled *Our Common Future*.

As I listened, a very bleak picture was formed in my mind. Demographic trends predict large rural to urban migrations which by the year 2050 are predicted to cause approximately 75% of the world's population to live in cities. Global climate will dramatically affect farm belts and desert regions, thus causing mass resettlement. Toxic waste is being produced at a rapid rate and with inadequate disposal methods available because the incineration method is costly and landfills have been found to leak. Internationally, the disposal of toxic waste produced in one country and deposited in another has created much controversy and will have to be resolved soon. In addition, nonpoint source run-off, which includes pesticide run-off from farms, is polluting water sources which provide drinking water.

These problems -- to name a few -- will continue to plague the earth in the future and are beginning to complicate the already difficult tasks of providing people with the basic necessities of life, such as lack of clean water, food, shelter, and health care, and have yet to be addressed adequately. It was evident from the World Bank meeting that issues concerning development and environment are becoming more and more complex and difficult to deal with.

The question which lingered in my mind after the meeting was, "Will my generation be prepared to deal with such multifaceted, multisectoral problems and, if so, how will it deal with them?"

After having talked with many internationals who come from different types of educational systems these past two weeks, I realized that the U.S. educational system tends to encourage people to specialize in technical fields such as business rather than encouraging the development of generalists who study liberal arts or social sciences such as economics or geography. By specializing too early, students do not develop a framework or foundation from which to draw upon to evaluate situations or problems which involve many facets of life or of society. For example, in order to design practical projects to promote sustainable development -- development which will not degrade the environment -- planners and decision-makers must be able to think integratively. However, if they can only focus on one small part of the problem of which they are knowledgeable, the final design of the project will be inadequate to solve the problem. I believe our educational system should provide the foundations for integrative thinking. Education about the environment, for example, and its interrelationship with humans and other sectors, such as industry, must begin in the primary schools and continue up through high school where more sophisticated curriculum would be taught.

It is indisputably clear that many of the serious challenges we face can only be met through cooperative efforts both internationally and domestically -- but it is going to take people with special abilities. Einstein wrote that creativity is of more value than knowledge. Young people are creative, visionary, and idealistic. In our culture, idealism is a dirty word. But idealism when combined with realism and practicalism makes for a well-rounded thinker, planner, and decision-maker. Young people have the unstifled ability to make the linkages between the human and natural environment. They are able to build bridges of communication and cooperation that are necessary for action to take place where others cannot. Why? Because they have not yet become a special interest in the power game, their raison d'etre is not to crush heads to get ahead, they have not realized that something cannot be done, and cynicism has not had a chance to rear its ugly head to crush their precious grains of creativity and to override their desire to make the world a better place. Young people's abilities need to be harnessed -- the well needs to be tapped before it runs dry and mercury creeps in from all sides.

I pose this challenge to local, state and federal (both executive and legislative) government, U.S. corporations, and NGOs. Time is running out to prepare young people for the task of addressing and/or solving domestic and global environmental, social, and economic problems, and to learn how to develop sustainable development policy -- policy which will provide for the needs of the people in ways that protect and restore the natural resource base rather than degrading it.

The United States has attempted to meet the challenge of preparing young professionals for service. I am part of a special program created by the Carter Administration called the Presidential Management Intern Program. The program was established to bring to the government bright young people who have completed their masters degree in areas such as public administration, urban and regional planning, and international relations. We are employed in a particular agency of our choice for two years where we are able to develop skills and expertise in our field. This is accomplished by finding assignments in other parts of the agency or outside of the agency (such as state and local government agencies, NGOs, or international organizations) and/or within the legislative branch. During the two years, the program office prepares seminars to develop our skills in management, and in cross cultural communication and negotiation. Seminars on the media and the legislature are also offered. The program provides young professionals the opportunity to find out how the system works or doesn't work and where their talents can be best utilized to benefit themselves as well as the government.

I have had several opportunities to do interesting environment and development-related work through my various assignments which included working for the Department of Interior, Senator Sanford, and the World Bank. In the Senate Foreign Relations Subcommittee, I helped develop two hearings on sustainable development; at the State Department I wrote the report entitled "United Nations Environment Programme: A Survey of U.S. Participation and Benefits"; and at the World Bank I just completed the Annual Environmental Sector Review.

As a U.S. citizen who is proud of my government and who fully believes in the value of the diversified abilities of my people, I realize that government, corporations, NGOs, and individuals together have the responsibility to create avenues where the innate abilities inherent in the country's human resources (a timeless and limitless resource) are developed and used to the maximum extent. Cooperation among various sectors of society, through the joining of hands in innovative partnerships, such as young professional exchange programs, fosters opportunities for mutually beneficial dialogue and understanding to meet the difficult challenges which lay ahead for our country and the world.

The vision for an integrative process must be realized by people in positions of authority. The facilitators of such a process will be those who are able to clearly see the long-term benefit of up front investment in their capital stock -- in their people -- without seeing an immediate return on the investment, and who are willing to take all the necessary actions and sacrifices to see that once the process has begun, it continues. Such people are difficult to find but they are out there and I have had the privilege to work with such great people.

Inspiration is a two way street. Young people are inspired by those who are selfless in their quest to protect the environment and to help people help themselves. Young people with idealistic thoughts and expectations, in a positive sense, inspire those who, for one reasons or another, have forgotten how to dream.

The Genesis scripture says that after God created the earth "He looked upon all He had made and said it was good." Men and women were given the task of stewarding this wonderful creation. Everyone has a responsibility and a stake in ensuring a healthy environment for all of its inhabitants.

Having the opportunity to participate in this sixteen day seminar has meant a great deal to me as well as being able to share with you, this morning, some of my heartfelt thoughts. I hope that I have inspired you to think of ways to participate in the stewardship of human resources, especially young professionals, and the natural resources found on this good and well- designed earth.

CHAPTER 8

THE CALL TO ACTION

Presentation by
DON LESH
Global Tomorrow Coalition

I want to express my appreciation to Legacy International for inviting me to this illustrious gathering, to the World Bank for providing the facilities that we are enjoying here, and to all of you hardcore members who have survived to this point.

After two weeks of intensive engagement with the issues of sustainable development and detailed discussions on conservation, resource use, population growth, environmental protection, and so on, I've been asked to talk about how we organize to make something happen.

You have heard from a wide variety of outstanding congressional experts and leaders from the corporate community, such as Phil Masciantonio and Bill Brown, and from this outstanding panel of NGO leaders who have just spoken to you, among them Joan Martin-Brown of UNEP. I'm not going to talk much about Global Tomorrow Coalition because those of you who are not members of the 20-person seminar who were the core group here may not realize that last Monday in Annapolis we had a very interesting and worthwhile session with the seminar members.

I would, however, like to share some thoughts with you about the process of sustainable development. What are we trying to do to achieve it? What can we say about it? In the process of questioning, let's refrain from looking at specific parts of the issues and instead look at the context and the basic concepts. We should discuss some of the obstacles, some of the opportunities, and perhaps suggest some ways we can take advantage of both.

I think we have to recognize, first and foremost, that everything we are doing here, everything we are talking about -- from the moment that this interesting seminar started two weeks ago until this moment -- is a process that reflects fundamental historical change. And *we* are the agents of that change, whether we believe it or not. We must recognize that change is difficult in every society, and change always hurts most the people who have the greatest vested interest in the status quo. So, we should not always expect our message to be received with open arms by those in authority.

There is a quotation that I particularly appreciate from Woodrow Wilson, which was recently quoted by the historian, Arthur Schlesinger, Jr., in an article in *The Washington Post* "Outlook" section. I'd like to share it with you, because even though it was directed at the United States, it says a great deal about what we are doing here. "America," Woodrow Wilson wrote about a century ago," is now sauntering through her resources and through the mass of her politics with easy nonchalance. But presently, there will come a time when she will be surprised to find herself grown old -- a country crowded, strained, perplexed -- when she will be obliged...to pull herself together, adopt a new regiment of life, husband her resources, concentrate her strength, steady her methods, sober her views, restrict her vagaries, and trust her best, not her average, members. *That* will be the time of change." I think we are part of that change; a change that not only affects the United States, but affects the entire world. The quotation tells us something about this era of transition, as we move tentatively and somewhat grudgingly towards the concept of sustainability.

When we talk about organizing for sustainable development, we should not think about the logistics of how to organize a community meeting, but ask ourselves some simple questions. Where are we going? What are we doing to our land, water, air, and oceans? How are those results that we see and begin to see more clearly as time goes by, related to numbers of people, the demands that they and we are making for basic needs, for development, and for progress? Simultaneously, what is happening to the rest of the world -- to the rest of life on earth: the birds, animals, and plants? How is that related to food supply, mobility, and habitat? How much is our fault? How much does it matter? Should we even care?

What do the emerging answers tell us about threats to our own health, to the health of our children and grandchildren now and in the future? What are the long-term costs and benefits of the choices that are, or are not, being made now? What kind of future do we seem to be heading for? Is this what we really want for ourselves and for our future generations? If not, what kind of future would we like? What goals should we set? Once we have those goals in mind, what needs to be changed in the current structure, and what needs to be preserved? What new steps do we want to undertake in understanding an action? What changes do we want to make in the structures and institutions of our economy, government, educational system, science, and technology?

These are not new questions. Earlier today, one of the speakers commented that some of these questions have been asked for centuries, since before the birth of Christ. Many of them have been asked in various forms in the last two decades in very pointed ways by, and among others, the Club of Rome in the book, *The Limits to Growth*; by the OECD study, *InterFutures*; by all the efforts that took place in 1970 on Earth Day; by the 1972 Stockholm Conference on the Human Environment; by the IUCN World Conservation Strategy; by the *Global 2000 Report* in 1980; by the continuing work of a whole series of organizations (many of which are represented today) such as the Worldwatch Institute, the World Resources Institute, and others.

All these efforts are sending us messages. They are telling us something. They are asking us about the need for a change -- change whose agents we can consider ourselves today. We haven't always liked hearing those questions and, in many cases, we have disliked even more the conclusions. We tend to reject those ideas because we find them uncomfortable. As we look at what's been happening in the recent past -- all the discussions we read in our daily press -- we must ask ourselves how accurate, how stimulating, how important some of those messages have been that we have ignored.

After we look at these questions in that context and think about where we're going, we must ask ourselves, "What are the obstacles? What do we have to overcome to achieve our goal?" I have used the United States as an example because we know it best; and I want to emphasize the point that when we discuss sustainable development, we are talking as much about the United States as about the rest of the world. We must not fall into the fallacy of self-exclusion. These issues affect us today -- our society, economy, government -- as much as they affect any other country.

My own view is that the challenge is not so much a matter of overcoming obstacles in the sense of categoric opposition, as it is a conflict with prevailing assumptions and mind-sets. And the three greatest barriers are inertia, ignorance, and procrastination. Now, how do these become so powerful? Let's look at some elements in the U.S. picture that affect the way in which we receive the messages of organizations such as Worldwatch, or publications such as the *Global 2000 Report*.

The first element is geography. Our country started with an immense continent with huge rivers and forests, rich mineral deposits, and an enormous wealth of topsoil measured in feet, not inches. In many ways, this image of the almost endless wealth of our continent still affects the judgments that we Americans draw, even though we are finally seeing some limits to those resources today.

The second element is the frontier mentality which is not only a Frederick Jackson Turner thesis, but something that affects us even today, long after all the real frontiers may have been reached throughout the country. I mean the kind of mentality that says, "If we don't like it here, we can go elsewhere. We can make decisions, and just move on."

The third element is economics. It is with good reason that there is a tremendous faith in the private enterprise system. After all, we can look around and see the unprecedented levels of affluence and the quality of life that our system has attained. It's very difficult to pose the question, "Has that system, and those rewards -- which are so strong, so real, and so manifest to all of us -- come up against some kind of limit, where they are no longer applicable?"

We have a sense -- and I felt it coming from the corporate comments in the panel this morning -- that, at times, we may be placing too much responsibility on the corporate system. The corporation is designed to take natural resources and extracted materials, and turn them into finished products. Its goal is to meet the demands, needs, and desires of the public, and in the process, produce a profit for shareholders. That's what it is supposed to do and that's what it does. If we then ask that system to take into consideration long-term factors of sustainability and so on, are we asking too much of the private enterprise alone?

The fourth element is faith in science and technology, and we have ample reasons to have that faith. Most of us belong to the generation that watched the space exploration programs and saw men walk on the moon. The recent Challenger catastrophe, of course, dashed a lot of that confidence; but I think it is basically still there in our society. We believe, very strongly, that science and technology can always provide a solution, and with good reason. But now, we are beginning to be aware of not only the benefits, but also the costs of those scientific and technological solutions.

There is something in this debate about sustainability that suggests the federal government should have a role in the long-range planning, but that idea is anathema to many people. Many people are predisposed against anything that smacks of authoritarian central planning; they don't want a Gosplan, or socialism, and so on. We need to be very careful about defining the appropriate governmental role. In the early days of the Reagan administration, some of the spokesmen for the administration had a great deal of fun with the concept of national foresight, and talked about the creation of a new post -- the "Foreseer General." So, we must appreciate that there is great suspicion about solutions that involve a larger government role.

Some concepts of religion have something to do with this, too. If we press the point, much in our background -- the Protestant Ethic, for example -- transmits messages that conflict with some of the new demands of sustainability. The injunction to go forth, be fruitful, multiply, for example, is great when you're leaving the Ark, but not at this point.

There is also something about isolation, about our uniqueness, about the two big oceans on our borders that have convinced Americans that they're different, not really part of the rest of the world. They say to themselves, "Everybody else may have troubles, but we'll still survive." If any one of you has had, as I have, the experience of trying to deal with American citizens in U.S. embassies and consulates overseas, you realize the touching faith they have in a U.S. passport. In some people's eyes, that passport means exemption from the laws of the host country. They are surprised and dismayed to find that it does not.

Finally, the last element is that we think we are the world's crisis managers, par excellence. We think, "O.K., there is a problem. We'll appoint a commission, they'll come in, look it over, make the best resources available, and we'll solve it."

There's a story that is worth telling because I think it illustrates this point. It's about an airline pilot who was called in for his annual physical. At the final review, the doctor said, "Sam, I'm sorry. You flunked. I can't approve you; you're out." The pilot looked at him questioningly. The doctor then said, "Well, it's your depth perception. It's just gone. How in the world have you been handling landings?" And the pilot responded, "Well, I use the Jesus Christ method." The doctor then looked a little puzzled. The pilot said, "I just get the plane on the radio beacon and head for the airport, and at the right distance, I begin to cut my altitude. I keep right on until pretty soon my co-pilot says 'JESUS CHRIST!' and then I level it off and I make my landing."

Well, we've been addressing a lot of questions in our society by the Jesus Christ method. We think we can wait until we see the problem, make the adjustments at the last minute, and then solve it. It doesn't work very well when the problems have long lead times that can span decades. It doesn't work well when the systems in which these problems have to be decided have long delays in the decision-making process.

If we look beyond these obstacles for a moment, and focus instead on some of the opportunities, I would say that there are things on the horizon that should encourage all of us when we think about organizing for sustainable development. One of them is that some very interesting things are being said by people in some very interesting places. Listen and see whether you can tell me the source of some these quotes. For example:

> "Degradation of environmental and natural resource systems worldwide is assuming massive proportions. And if these systems that underpin and support national economies collapse, the social and political consequences are likely to assume wider dimensions, thereby posing a threat to regional security and international peace."

Could this be from an apocalyptic report by The Club of Rome? The Worldwatch Institute? No, that is from the 1984 report of the World Bank.

> "Sustainable development implies a long-term perspective and understanding of the critical linkages between environmental protection and economic development. In other words, it is not just development we are hoping to sustain, but a global environment that sustains all life."

That is from a speech by Alan Woods, the Administrator of the U.S. Agency for International Development.

> "We will emphasize the importance of protecting renewable resources to reduce pollution and waste. Only by defending nature can we ensure the survival of man."

That is a quote from Barber Conable, the President of the World Bank.

> " The World Bank and the NGOs are quite different. Precisely because they are so different, they have a lot to learn from each other at the global level, the national level, and the grass roots level. By working together, the Bank and the NGOs will both be more effective forces in the world's gathering effort to eliminate mass poverty. Let us act in common on the urgings of Teilhard de Chardin who said, 'The age of nations has passed. It remains for us now, if we do not wish to perish, to set aside the ancient prejudices and build the earth."

Is this quote from a religious leader? The Sierra Club? No, that is Moeen Qureshi, the Senior Vice-President for Operations of the World Bank.

I think there are several things happening. Obviously, people are saying things of interest, and also doing things. One of the things that the Bank has done, which we all must applaud and encourage, is the creation of its new Department of Environment. This is only coming into its own at the present time, but it is a hopeful sign for the future.

Another example of opportunities that now may be opening is in the communication media. This is not in any sense an exhaustive selection; this is only one person's quick observation. In part, it is affected by the fact that I was outside of the United States during June and the early part of July. When I returned, I think I may have been a little bit more alert to the issues and stories that were appearing on television and in the newspapers.

What did I find? A major article in *Newsweek* on "Global Warming and the Greenhouse Effect," and daily reports of beach pollution throughout the northern part of the United States, especially in New Jersey and elsewhere. A week or two later, there were simultaneous cover stories in *Time* and *Newsweek* on ocean pollution. In one of the little weekly television magazines that circulated by *The Washington Post*, the front page feature was an Audubon special with the title, "Environmental Warning - The Bird's Problem is Man's Problem." In the last week, in almost successive days, the NBC "Today Show" has had interviews with Lester Brown of the Worldwatch Institute; with Jim Fowler on wildlife preservation, particularly on loss of the black rhino in Africa; and also special features on acid rain and ocean pollution. There was a major article in the "Outlook" section of *The Washington Post* addressing the fact that we should not be complacent about what's happening in the world population growth.

I realize that these are just straws in the wind, little bits and pieces. You can name many other things, too. We should not over-interpret them but remind ourselves that, not so very long ago -- in fact very recently -- we sat around meetings like this and expressed great concern about gaining access to the media. We were wondering how can we present our messages not only through heavy, long documentaries, but through the news. How could we break into daily reporting? Well, somehow we're doing it. We should realize that this is a new opportunity for us to exploit.

Things are happening on the political scene as well. Earlier, I mentioned the names of some of the speakers addressing this conference. Let me add a few more. Under the inspiration of the global warming issue and the meeting in Toronto, some very promising and far-reaching legislation on acid rain and atmospheric protection is being proposed by Senator Tim Worth of Colorado and others in the Senate. Hearings have been held in the Senate by Senator Terry Sanford of North Carolina on the significance of the report of The World Commission on Environment and Development, and the whole concept of sustainable growth, for U.S. foreign assistance policy. There is a real possibility (not in this session of Congress, but after the election) to enact a new Foreign Assistance Bill for the first time in years. This is not a continuing resolution but actually a new bill, which Gus Speth of The World Resources Institute has said should be called the Sustainable Development Act, not the Foreign Assistance Act. After many years, there has also been the re-authorization of the Endangered Species Act.

Another issue which you probably are not aware of arose in the House of Representatives, where Congressman Richardson of New Mexico held a hearing recently on a bill to reach a settlement between the United States government and the Zuni Indian tribe in New Mexico and Arizona. We might ask, "Why should that concern us?" Well, as Americans, it should concern us first because it's a very tiny step towards a measure of equity in contrast to what has happened in the past. But beyond that, this bill would end a longstanding litigation against the U.S. Government by transferring twenty million dollars to the Zuni tribe. Eight million dollars would go to pay off past debts, and the legislation specifies that twelve million dollars would go into a permanent fund for the "sustainable development" of the watershed and the management of natural resources in the Zuni lands. It would include, for example, the creation of something which might be called a Zuni C.C.C. (Civilian Conservation Corps), a youth training program to carry out the local level work with the support of a very sophisticated computer monitoring system. This is a very small example but one, I think, of local, national, and even international significance. It tells us how the concept of sustainable development can be built into the structures of our societies.

I think it's time to reorganize, to redouble our efforts, to think about innovative ways we can use these opportunities and overcome these obstacles. I am not going to go into a detailed explanation of how we might do that, because I want to present a different kind of suggestion that some of you may already know. It comes from perhaps an unexpected source, the novelist Kurt Vonnegut. You may have noticed that, in the February issue of *Time* magazine, he responded to a challenge to write a letter to the generation of 2088, a hundred years from now, in an advertisement sponsored by the Volkswagen Corporation. Vonnegut said, among other things, "Now that we can discuss the mess we are in with some precision, I hope you have stopped choosing abysmally ignorant optimists for positions of leadership." (This has no relevance whatsoever, of course, to the current presidential campaign). "They were useful only so long as nobody had a clue as to what was really going on -- during the past seven million years or so."

"The sort of leaders we need now are not those who promise ultimate victory over Nature through perseverance and living as we do right now, but those with the courage and intelligence to present what appear to be Nature's stern, but reasonable, surrender terms." And then he goes on to enumerate several of those terms:

1. Reduce and stabilize your population.
2. Stop poisoning the air, water, and the topsoil.
3. Stop preparing for war and start dealing with the *real* problems.
4. Teach you kids -- and yourselves, too, while you're at it -- how to inhabit a small planet without helping to kill it.
5. Stop thinking that science can fix *anything*, if you give it a trillion dollars.
6. Stop thinking that your grandchildren will be okay no matter how wasteful and destructive you may be, since they can go to a nice new planet on a spaceship. That is *really* mean and stupid.
7. And so on. Or else.

Ladies and gentlemen, I could not suggest a more appropriate conclusion than that. Thank you very much.

Presentation by

DR. STEPHEN LINTNER
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Thank you very much, Dr. Kaufman, for a wonderful introduction. The concept of Youths for Environment and Service (YES) stems from a concern shared by those in the international development community and nongovernmental organizations to focus the interest of young people on environment and development issues. The program recognizes that approximately half the population of the earth is under twenty-five years of age and that these individuals will become our future leaders. The program seeks to interest youth in actively and constructively examining environmental issues, in the creation of organizational networks, and in forming long-term bonds.

My comments today will focus on sustainable development in the Mediterranean Region. This region has been the focus of several important environmental initiatives. The foundation of these initiatives was laid over a decade ago when the United Nations Environment Programme successfully brought countries in the basin together to support the Mediterranean Action Plan (MAP). In 1988, the European Investment Bank and the World Bank began preparing the Environmental Program for the Mediterranean (EPM) which provides policy and investment recommendations in support of objectives identified by MAP. The development of YES also grew from this concern about protection of the Mediterranean environment. The YES program is an outgrowth of the United Nations Environment Programme (UNEP) sponsored conference entitled, "Mediterranean Youth and Environment Conference", held in Cartagena, Spain in 1985.

The Mediterranean Sea and the surrounding lands are a major crossroads of history, cultures, and commerce. It is also an area where the flora and fauna of Africa, Asia, and Europe come together. The sea and its extensive coast line provide habitats for a wide range of animals and extensive opportunities for recreation. However, the Mediterranean remains a fragile environment which requires careful management. The limited land and water resources of the region are under intense pressures from urban expansion, industrial growth, increased tourism, and coastal development, while the irreversible conversion of restricted areas of wildlands and the degradation of fish habitats is proceeding at a rapid rate. This development pressure weakens the stability of the region.

Sustainable development in the Mediterranean region should strive to return a balance between man and nature. Recognition must be given to the need to manage terrestrial, coastal, and marine resources as largely man-modified environmental systems. Nature must be accommodated through the

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The views expressed in this presentation are those of the speaker and should not be attributed to the World Bank.

conservation of remaining natural areas, the rehabilitation of degraded areas, and the adoption of more ecologically sensitive approaches to resource management. Much greater attention needs to be given to the dynamic nature of social and economic development. All plans need to recognize rapid changes in total population, the redistribution of population, changes in technology, and different consumption patterns in the future. The UNEP coordinated Blue Plan for the Mediterranean Region provides an example of a "futurist" analysis which can identify potentially significant trends before they occur.

The development of an action program to address both present and future problems must recognize the key role played by timing and sequencing of activities as well as the constraints imposed by variable levels of commitment, institutional capability, and the availability of funding. Critical to any successful program is political and social commitment. In the Mediterranean this is especially important due to the large number of nations which share the sea. Timing and sequencing of actions need special attention; for example, the protection of groundwater resources from contamination by an industrial facility may need to be addressed before the control of air emissions from the same source. Institutional capability needs to be carefully considered in order to assure that proposed actions can be undertaken, management programs implemented, and facilities operated and maintained on a long-term basis. It must be recognized that the availability of funds for capital investments and recurrent costs is limited and that environment and natural resource programs must compete with other sectors.

Priority should be given to addressing problems which are irreversible, such as the conversion of critical plant and animal habitats, including wetlands; the establishment of recreational areas; and degradation of archaeological and historical sites. Continued programs of investment are required to treat domestic and industrial wastewaster, control air pollution, and improve solid waste management. Emerging problems, such as the management and safe disposal of hazardous and toxic wastes, need to be recognized and resolved in the near term. Steps should also be taken to scientifically examine long-term regional and global environmental trends in the Mediterranean such as sea level rise and transboundary air pollution.

Key elements of a program to restore the balance between man and nature in the Mediterranean should include the following items:

- Political and social commitment to protect the environment and to manage natural resources;
- recognition of the long-term economic benefits derived from the sustainable use of the environment and natural resources and the incorporation of these precepts into planning and decision making;
- adoption of new policies concerning environment and development;
- establishment and enforcement of laws and regulations to protect the environment;

- adoption and use of integrated planning methods for terrestrial, coastal, and marine ecosystems;
- investments in preventative actions to avoid the creation of new environmental problems; and
- institutional development and training for both public and private organizations, including nongovernmental organizations. This should include major support for public education programs.

Sustainable development in the Mediterranean region requires a long-term commitment to resolve environmental problems of the past, to better manage presently available resources, and to plan for improved management in the future. It is a commitment to work at a variety of levels to achieve objectives. Some problems are global, others regional and national, and many are local. The problems of the Mediterranean are those of a specific region; however, the process used in their identification and resolution can be transferred to a variety of locations and applied at a number of scales.

My hope is that bonds developed between individuals and organizations participating in this program prove to be sustainable. Furthermore, I believe that the lessons learned from comparison of conservation experiences in the Caribbean Sea, Chesapeake Bay, and the Mediterranean Sea stimulate a diversity of approaches to promoting sustainable development in a world of increasingly common problems.

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LEGACY INTERNATIONAL

Legacy International is a non-profit educational organization fostering cross-cultural understanding and dialogue on critical global issues through training and action programs. Core subject areas include environment and development, conflict resolution, and leadership training and skill enhancement. Fueled by a positive commitment to the future, Legacy activities are a catalyst for youths and for business, government, academic, and civic leaders to work cooperatively on local, regional, and global needs.

Legacy has been working in the area of environment since 1985 through the establishment of YES (Youths for Environment and Service) in the Mediterranean region and more recently in the United States. Sustainable development seminars and projects include:

Sister Seas Program - A seminar for young professionals and leaders of the business, civic, and government communities which examined the Chesapeake Bay as a model for sustainable development.

Global Viewpoints Forum - Presentations on critical global environmental issues and regional conflicts from the perspective of government policy makers.

Virginia Growth Management Forum - A three day conference focusing on sustaining the economic and environmental future of the State of Virginia.

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use the area. We believe that the success of this project will rest on our ability to understand and to meet the real needs of the fishing community. To let community involvement grow and develop at its own pace takes time, but the rewards are significant.

I would like to close with a few thoughts. I have been wrestling, just as you have, with the concept of sustainable development and biological diversity. Many of you are probably tired of hearing these words -- at least I am; but we live with them. And so, I came up with the following thoughts:

Words contain ideas, ideas lead to policies, laws, and actions by governments, private organizations, and individuals. The idea behind the words "sustainable development" and "biological diversity" has been with us for a very long time. The idea is to recognize that the quality of life for human beings and, in some instances, their very existence depends on conservation of the natural resource base while development goes on. Development in this context can mean anything from building whole cities to establishing marine parks.

As nations and communities choose their policies, laws, and actions for the remaining years of the 20th century and the beginning of the 21 century, our challenge, as environmentally trained and aware citizens of the earth, is to make these ideas the rule and not the exception.

Presentation by
PETER SELIGMANN
President
Conservation International

This conference has been very interesting to listen to because of the different approaches that nongovernmental organizations -- or actually private service organizations -- can take in trying to affect life on this planet.

Let me explain a little bit about the organization I work for. It is called Conservation International, and unlike the Sierra Club which has been around for one hundred years, we have been around for only one year; and unlike the World Wildlife Fund and CARE which have products all over the world, we only have products in a few places. I am not certain whether this is a rationalization on our part, but we are doing that intentionally.

First, a brief history about Conservation International. I think that if you understand a little bit more about the people that make up the organization, you might understand more fully our approach and strategy towards conservation. We were the international division of the Nature Conservancy, and our approach in that division was simply that the decisions about conservation and development could not be made separately. The decisions had to be made by local communities and local people, which meant that the authority for deciding what should happen had to go to the local community. This implied that both our board and our staff had to be international. It really didn't suit the Nature Conservancy as the most effective U.S. organization to give the authority and the direction overseas, and it became clear to both of us that it was important to set up a new organization.

I look at this group here and see lots of potential. There are people from many different countries interested in the idea of linking conservation and development -- people who probably, after this week, understand that they are one and the same. You can't distinguish between conservation and development. They are different sides of the same coin. It's life, it's emergence, it's part of the social fabric of any nation. If you don't have the resources to conserve, you don't develop. That gives you some idea about where this organization came from.

We just got through a few days of planning which you probably do more of when you're starting an organization than later on. We're revising our mission statement which states as its goals: "To build sustained life on earth, biological diversity, ecosystems, and ecological processes by building local capacity." It means that the local capacity and the ultimate mission of sustaining life on earth can not be separated. As an organization that is relatively small, we now have fifty employees. Our philosophy is to have our head in the sky and our feet in the mud. We feel that the head in the sky is necessary because you want to see the forest, but the feet in the mud is essential because that's where reality is. I think everybody has pointed out eloquently, that the local woman looking for the best species of trees is going to be much more effective because she's there, sees the soil, is used to the climate, and understands when the locusts come -- and that is the basis for reality.

Integrating conservation with development is a very complex problem. It is complex because the factors that affect conservation are enormous -- people, population, food, governments, or bureaucracies -- every single hurdle you can throw in the way of a successful blending of conservation and development is there. And so, the solutions have to be just as complex. I come back to that because, since the solutions are so complex, we as an organization are trying to focus on a few places. We are trying to assist in the design and development of a successful example of an ecosystem conservation effort where the local communities are benefitted by the conservation of resources. In order to do this, we picked a few countries and we now work in Bolivia, Costa Rica, Mexico, Guatemala, and perhaps even in Peru and Nicaragua in the near future. We're trying to look at the whole issue of how to develop the capacities within a country to effectively address sustainability of resources. We decided not to work at the national level because what happens in the United States at the Grand Tetons or Yellowstone is not affected as much by Washington, D.C. as it is affected by the town that's nearby. So what we're trying to do is to start at the local level and have a design of a program in the hands and the mind of the local people and have from that point emerge the structure at the regional, national, and eventually, at the international level.

Let me talk a little bit about Bolivia because it's the country where our program is most developed. It's a program that I understand very well and it is one that I think already has had international ramifications. In July of last year, we as a young organization, worked out an agreement at the request of the Bolivian government to exchange debt for conservation. We purchased Bolivian debt which was selling for ten cents on a dollar and agreed to exchange the debt for the Bolivian commitment to establish a four million acre region as a biosphere reserve in Bolivia -- plus the agreement to exchange the debt that we purchased for local currency to finance the management and development of that region. It was a very insignificant amount of money. I think we purchased $650,000 worth of debt and paid little less than $100,000 for it. We didn't even get a good deal on it. The price went down to nine cents the next day. We made a lot of mistakes.

Fortunately, other organizations such as the World Wildlife Fund and Nature Conservancy have been improving upon the strategies for doing debt-for-conservation agreements, and we're getting better as we go along. The important thing was the linkage. It was the linkage of an economic condition of a nation with the conservation of its resources. This approach wasn't great wisdom on our part; it was great wisdom on the part of the Bolivians because the success of any effort is obviously dependent upon the local community, the local people, the president, the Indians, the foresters, and the planners. Those are the people who said: "Let's do a transaction where you can reduce our external debt, and the pressure that we are under to clear cut a mahogany forest. Give us the opportunity to try to develop a long-term horizon for the use of all of our resources." Of course, that's a very pretty picture and it was very well received by the press. The work began the day after the deal was signed and is now ongoing and may be ongoing for a hundred million years. I hope we can have a shorter time frame for measuring success.

The area that we talked about establishing as a biosphere reserve is a spectacular region. It is a good region to work in as an experiment because it's isolated. If you know Bolivia, there is the Alto Plano and then there is the Amazon Basin -- completely different cultures, only one dirt road that runs through the place, very few people, and very little pressure. But the pressure is coming. The resource used is timber, extracted by clear cutting the mahogany. There is cattle grazing, some farming, and cocaine processing -- which is fortunately diminishing rapidly because the cartels are trying to move all that stuff up to Colombia. The people there are the Chimane Indians, an indigenous group of hunters and gatherers; and then the cattlemen, the foresters, and the local community. What we have done, as the newly appointed advisors to the Bolivian government on conservation, is try to design a process for establishing the blend of conservation and development and that, I think, is the most important thing to do. There has to be local control and that's what it is. There is a commission of foresters, cattlemen, and community people that have just taxed themselves. They are taxing all the timber taken out of the area to finance the planning, conservation, and development of the region. That is the most significant thing that happened. This is much more important than the debt-for-nature agreement. The debt-for-nature agreement was international, but taxing is local and that's where the future of that region lies.

The opportunities are endless. We can spend every penny in one place or we can shift all of our resources to a thousand places. What our organization is trying to do is to demonstrate some examples by intensively focussing on them, and staffing them so that at the end of a few years there will be some highlights that others can look at. The technology is not even there.

To understand what has to be done in conservation in Bolivia, we have to set up vegetation maps. There are a handful of botanists in the country and probably the same number of zoologists. So, the whole effort is focussed on training people, building institutions, designing programs, and just providing ongoing, thoughtful, and complete support for one program.

We're doing the same thing in Costa Rica in an area called La Amistad which covers ten percent of Costa Rica. Again, it involves forestry, hydrology, resource extraction, conservation, many governmental authorities, and no communication. Now, we're working there, financed by another debt-for-nature transaction. We're developing a commission to integrate all the different uses. So, just as indication of what one organization is doing, that is our approach. There are many organizations involved in this. If the anthropological, developmental, and socio-economic sides are not addressed as carefully as the conservation side, all we will have is one failure after the next. And that's why, this new organization in any case, has in its mission that we're searching for ways that development and conservation can go hand in hand.

Good luck and thank you very much.

Presentation by
REMKO VONK
Acting Director
Agriculture and Natural Resources
CARE

Thank you very much. First of all, I would like to specify a few things. I am not going to describe what sustainability is. I think it has been described enough, although most people are still confused about it, and I don't think I can explain it better. But I would like to talk more about CARE.

I represent CARE here at the nongovernmental organization forum. I don't like that term because NGO spells what we are not -- the term does not tell us anything about what we are. I think the title "private service organization" would be more appropriate. CARE has been involved in the area of development since the Second World War, when the European nations started the reconstruction efforts. Once that work started showing some results, CARE moved to the third world countries. At the moment, it is working in seventeen African countries. I will focus my presentation on East Africa.

CARE is still involved in relief, but in addition, it is involved in health efforts, and in improving the capabilities of local communities to generate income. Over the last eight years, CARE has also been involved in agricultural and natural resources projects in Africa.

We consider it our strength that we work with both people and governments at the local level although we don't have a continental mandate. It is very difficult to live up to statements such as "We are going to stop desertification." Given for instance, the size of the Sahel, the problem is immense. The entire Sahel is just too large of a region of focus so we try to concentrate our efforts in places where we can be effective. This means very often that we work in a specific area on a small scale with local people. We find that those small areas can be very meaningful and our small scale, local approach often produces results that can be extrapolated and expanded upon.

Development is about change and that is what we are trying to achieve. Fortunately, change and development occur without the existence of CARE, U.S. AID, the World Bank, YES or any of these organizations. People change and people develop and all we are doing is trying to help them in the process. If we keep this concept in mind and use it as the starting point in our approach to development, we both enter and exit the change process as an outside organization. We try to contribute to people's developmental process without becoming permanent entities in their development.

People respond to a changing environment. As outsiders, we often see Africa as a continent in need of assistance, just waiting for someone to come along and help it. We forget that people do respond intuitively to situations that confront them. People respond to changes in the political systems, national boundaries, climate, and population. Unfortunately, people without resources do not always have the luxury to respond in the best possible way. They often respond at the cost of the few resources they have available -- the natural resources. What results is often an unsustainable situation. The outsider often sees this unsustainable response as deforestation -- as the disappearance of tropical forests, the vegetation covering around the Sahara region -- and the solution often calls for reforestation. The greening of Africa and similar efforts are often mentioned as a response to the disappearance of the forests. We believe that reforestation has to be done, but does it really have to be done in the forests? Reforestation actually means putting forests back in place.

I would like to present some interesting data about reforestation that will put things in a somewhat different perspective. Statistics have shown that over fifty percent of the wood that is being harvested in Africa is not harvested in the forest but on farms. Over eighty percent of that wood is harvested not by foresters but by women who collect firewood; and over ninety percent of the wood is burned.

Now, this information demands a completely different approach to sustainable development and consequently, to reforestation in Africa. It means that we have to focus on reforestation on the farm level -- where wood is gathered, the women who gather it, and the part of the tree they harvest. A woman does not go out with a chain saw to collect firewood by cutting a tree with a very large diameter; she goes out with a machete and cuts up some branches from a small diameter wood. These three simple facts have changed CARE's whole approach toward environmental degradation in Africa.

People who think globally might argue that we have to look for alternative fuel sources so people won't have to cut trees anymore. It is good to keep in mind that in 1984, Tanzania spent over ninety percent of its foreign exchange on petrol. Many countries simply don't have any alternative and therefore, they have to continue cutting wood.

Another response that often confronts us is the notion of a miracle. I would like to call for a "non-miracle." There have been enough attempts -- miracle attempts -- to solve deforestation or environmental problems. One example which is not really related to forestry but that I would like to share with you is the introduction of the Nile Perch to Lake Victoria in the early fifties. It was believed that the Nile Perch would be better than fish native to the lake, because it yields more meat. Currently, the Nile Perch is just about the only thing that swims around in the northern part of Lake Victoria -- a lake that is larger than my home country, the Netherlands. The effects of its introduction have been disastrous. The fish can not be sun dried; it has to be smoked to be preserved. As a result, anything that can be burned around Lake Victoria has been cut to preserve the Nile Perch so it could be transported to the cities. The environmental impact of this decision has been tremendous, not to mention the impact the Nile Perch has had upon the wildlife and the other fish in the Lake which have long since disappeared.

In southeast Asia, the Leucaena has been introduced on a very large scale as the tree that would solve all problems. It is an incredibly fast growing tree; it is as if you drop a seed in the ground, turn around and look back and there is a tree. There is a little insect called the syllid that is found on this tree. It is causing problems for many small farmers who have adopted the tree in their efforts to reforest their farms in order to earn an income. We have to pay a lot more attention to the indigenous resources that are available and have been tested over hundreds of years by generation of people.

In the region of Kenya where I worked for three years, there is a local tree species that did not show up even once in three independent literature data base searches, although it is the species most commonly used by farmers on their farms. This species not only occurs in Kenya, but it is also very common in Uganda and Rwanda and it is now one of the most commonly used species in our project. This tree, the Markhauia Lutea is unknown to us, but is very well known to the farmers. Thus, we have to forget our biases. When we go in and try to work on sustainable development, we should do it from the perspective of the people we try to help and not just from our perspective.

What can we expect from a sustainable developmental approach in the agricultural and natural resources field? We can expect more sustainable cropping and grazing systems, but also more communities organized around the goal of sustainable development. Sustainable development is getting people out of the poverty cycle. A very important first step is helping people appreciate the fact that their own local resources can be used in a sustainable way.

How do we measure sustainable development? There are few indicators of sustainable development and very often they are negative indicators. It is very easy to measure something that is not sustainable. The dinosaurs were not sustainable; we have good proof of that. But are some of the developmental efforts that we are trying to put in place sustainable? I think the efforts that we are making to involve people to the maximum extent, in the definition of the problem, the design of the technology, and the evaluation of that technology is the best first step to sustainability. If people are not involved in those three steps, then the likeliness of sustainability will be reduced. If people are not involved in the design of a project, then it is unlikely that project's activity will be sustained by the people. And if people are not involved in the implementation of the project, it is not likely that they will sustain it after the external agent pulls out. If people are not involved in the assessment of the success of the project, and therefore not involved in the refocussing and the redirection of the project, then it is not likely to be sustainable. So a good indicator of sustainability is participation. Of course, there are dozens of examples that will tell you that the opposite is true but in general, it's a pretty good indicator.

Recently, I went back to a project that I had started in Africa. There, I found an old woman experimenting with various nitrogen fixing trees in her hamla -- her crop land -- with more success than the scientists accompanying me from the International Council for Research in Agro-Forestry had ever seen. She managed to find management methods that were much more workable for her than the scientists could have thought of themselves. She also had much better indicators for success: "Well, I can put my children here in school. I don't have to send them to the city anymore. I can feed them here because I can keep them and because of that, we can all work on the farm together and there is a future for them on the farm." That, for her, was the indicator of success. It was not the amount of nitrogen fixed by those trees, it was not soil cover, it was not the diameter of the tree or whatever. She had a completely different indicator of success.

Sustainable development means giving to people whose development we interfere with every opportunity to find, to examine, and to experiment. We have to help them develop new approaches, take them out of the downward cycle they are trapped in, and give them the opportunity to step back and analyze alternative approaches. After all, when you talk about sustainable development in Africa, it's the African, him or herself, who knows best how to approach it. In Africa, sustainability starts at the level of the individual as far as we are concerned in our approach.

And with that, I would like to close. Thank you.

CHAPTER 7

FUTURE LEADERS' RESPONSE

Presentation by
LAURIE MACE
Conservation & Protection
Ontario Region
Environment Canada

I would like to put forward to you today that young people in Canada are in a unique position to affect and promote sustainable development because the implementation of this concept -- sustainable development -- is on Canada's social and political agenda.

Let me make note of some of the unique features of Canada's social contexts to perhaps explain why this might be and then give a few examples of how Canadians can take advantage of this opportunity.

Firstly, most people of my country are in no danger of running out of water, or habitable space, or exhausting their forests, fish, or land resources, or suffocating from industrial emissions. However, there is much evidence of declining environmental quality. Foresters have to go further to find good quality timber, farmers are adding more chemicals to make up for losses in soil quality. Unlike many countries, Canadians are in the enviable position of being concerned about the quality of their natural environment rather than the quantity.

Secondly, Canadian citizens have demonstrated that they recognize the direct relationship between the well-being of the natural environment and our own well-being. Our growing appreciation and interest is illustrated by the fact that environmental issues are taking up more space than ever before in Canadian newspapers. This interest is verified in public opinion polls which show that Canadians are concerned about the quality of their environment -- in fact more so than any other issue. Furthermore, they have expressed a willingness to pay. For example, three to four years ago, polls showed that 90% of Canadians believed that every major economic project should be demonstrated to be environmentally sound before it can go ahead. Even after being told that stricter environmental laws could result in increased prices -- money from our pockets -- 83% of Canadians expressed a willingness to pay that price.

Thirdly, young Canadians have as their example the leadership and ability of politicians, academics, industrial executives, and environmental organizations who are working together in partnership.

I would like to take a moment here to explain specifically how Canadian political, industrial, and environmental leaders have responded to the challenges outlined in the Brundtland Commission Report. And I challenge all countries represented here -- and particularly our host nation today, the United States -- to respond in like kind.

There is a voluntary association of Canada's highest ranking elected officials called The Canadian Council of Resource and Environment Ministries (CCREM). This Council is made up of environment and resource ministers from ten provinces and two territorial governments and the federal government. In a desire to respond directly and immediately to the Brundtland Commission Report, CCREM set up a special task force made up of seven of Canada's environmental ministers as well as ten other respected academics, senior leaders of Canadian industry, and Canadian environmental groups. This task force was called The National Task Force on Environment and Economy -- "environment and economy" being Canada's buzz word for what we are referring here today as "sustainable development" -- and was asked to bring together ideas and recommendations for the promotion of environmentally sound economic development in Canada. It has, in essence, become an endorsement of the Brundtland Commission Report -- at the highest level in the country.

The task force arrived at six major recommendations. I emphasize that these were arrived at through the consensus and agreement of a small group of Canada's highest ranking leaders from a number of sectors of society. I am taking the liberty of restating five of those recommendations as direct challenges to each of us. (Although I will speak of these in terms of my country, Canada, perhaps we can each listen to the following comments in terms of our own nation, our own life.)

1. INFORMED DECISION MAKING

Besides the incentives of environmental regulations, the market economy, with its energy and technological resources must contribute to the solution. Together, we must improve our ability to forecast the environmental impacts of our actions. We must further develop methods for the evaluation of natural resources. Informed decision making can also be encouraged through the use of concrete examples or demonstration projects which prove that integrated economic and environmental planning can work.

2. LEADERSHIP

Government must integrate environmental input into decision making at the highest level. Industrial associations can encourage codes of practice and performance standards for specific industries. Business associations can also contribute to the environmental awareness of small- to medium-sized firms which may otherwise lack the resources to retain their own environmental specialists. And environmental organizations must continue as leaders in their early recognition of environmental issues and their unique position to foster public debate.

3. ROUNDTABLE OF SENIOR LEVEL MULTISECTORAL DISCUSSIONS

Modelled, in a sense, after the National Task Force itself, each Canadian province or territory has been challenged to form a multisectoral Roundtable on Environment and Economy as a permanent forum in which all sectors can meet to cooperate to influence planning at the earliest point and at the highest level. And most importantly, the chairmen of each rountable would report directly to the first minister of the jurisdiction in which it is formed. The members of each roundtable will be those who exercise influence over policy and planning decisions and whose various areas of expertise can assist debate. The idea is that these forums will exert influence on the basis of their credibility, their independence, and their access to the views of important sectors and levels of society. (I am happy to report that to date, at least two of Canada's provinces have already taken steps to initiate their own roundtable.

4. RECOGNITION OF OUR INTERNATIONAL RESPONSIBILITIES

Canada is committed to sharing its expertise and to learn from others in the international effort to attain sustainable development. In its bilateral aid decisions, Canada -- for example through the Canadian International Development Agency (CIDA) -- is requiring environmental impact assessments of all projects financed by them. Canada is also continuing its strong support of the United Nations Environment Programme.

5. COMMUNICATIONS AND EDUCATION

By soliciting the support of each province and territory's education minister, the environment ministers can upgrade education, especially at the elementary and junior high school level. Environmental economics and, in particular, the concept of sustainable development can be incorporated into high school and university studies. There we have it:

- informed decision making;
- leadership;
- roundtable discussions;
- recognition of our international responsibilities; and
- communication and education.

And with this, a final point: Why is it that knowledge of how to use the environment productively without causing long-term deterioration is increasing, but that we are far from putting all this knowledge into action?

The most likely explanation is that the problem of maintaining environmental quality is as much "individual" as it is technical or economic. The people of Canada, by their actions and by their votes, determine the level of "stress" not only on the environment, but also on the decision makers! The appropriate decision maker, however, is not always someone else. Each of us -- as individuals, as consumers, as voters, as members of a community -- is contributing to the stress on the environment and each of us can respond in ways that will reduce or modify that stress. Ultimately, Canadians will have the environment they deserve.

This conference is subtitled "A Call to Action." I call on each one of you to find these incentives for change:

Strengthen your data base.
Share information more effectively.
Explore the true value of your environment.
Indicate new directions by your example.
And, perhaps most importantly: Establish *new* measures for success.

Thank you.

Presentation by
WALID MOHAMED
Executive Director, YES Egypt
Former Executive Board Member
Arab Office of Youth and Environment

Ladies and gentlemen, dear guests, participants, colleagues, and friends. As I am representing the Mediterranean region, I would like to give you an overview on the region, the sea, the people and their activities.

What do we mean when we talk about the Mediterranean Sea? (Hundreds of things at the same time. It brings to mind not only its natural view, not only one civilization, it brings all of these.) What does the Mediterranean Sea mean to the more than 250 million persons living on its watershed?

> It means fishing -- more than 30% of the inhabitants make their living through commercial fishing. Their share represents 1% of the world's production, but it represents 4% of the commercial value.
>
> It means tourism. The Mediterranean region receives one tourist out of every three in the world; that's 90 million tourists per year.
>
> It means life or death.

The Mediterranean Sea is the oldest and largest landlocked sea, with eighteen countries and 400 million inhabitants. As a result, it suffers from many problems:

> 85% of the sewage from the coastal cities flow without treatment into the sea.
>
> Rivers drain pollutants into the sea, including 600,000 tons of detergents, 320,000 tons of phosphorous, and 800,000 tons of nitrogen per year.
>
> Over 20% of the world's oil pollution end up in the Mediterranean.
>
> The Mediterranean is dying.

The Stockholm Conference of 1972 is the starting point for organized world to save the old sea's life.

In 1975, for the first time, eighteen countries gathered in Barcelona. They accepted the Mediterranean Action Plan (MAP), which then became the Blue plan, followed by the Priority Action Projects (PAP).

Also starting in 1972, youth movements began to change and be more environmentally oriented. Environmental youth movements started initially in Scandinavia and northern Europe, although it took some time to come to the Mediterranean region through the southern European countries. It took seven years to come to Egypt, where the first youth environmental organization in the Middle East and the surrounding Arab countries was formed.

Until this time, the two regions had not worked jointly at the youth level. Starting with the "Mediterranean Youth Conference on the Environment," in 1985, Cartagena, Spain, seventy participants from eleven nations accepted the Cartagena Declaration which included the following needs for a Mediterranean youth organization:

Promote youth activities,
Exchange experiences and resources, and
Work together as one region.

In response to that statement, youth representatives from the same countries that participated in Cartagena, met in Athens in 1986. They successfully established Youths for Environment and Service (YES), and ratified its constitution.

Since that time, a higher level of communication and cooperation has been achieved. Regional projects such as beach cleanup have been implemented; and local projects such as a cleanup campaign, water treatment program, and health care project in a rural area in Egypt have been started. I considered this project as a good model for grass roots projects which apply the concepts of sustainable development. With the help of community residents, youths and senior citizens, the local council, and private corporations, YES Egypt removed two large garbage dumps, and set up a garbage delivery system in this area for the first time. By the end of this project, we will have accomplished the main goal of improving the community's quality of life by improving the environmental conditions and by raising the health level among the people.

Simultaneously, on another level of work, Mustafa K. Tolba has succeeded in forming the Senior Womens' Committee on Sustainable Development, and later on the World Commission on Sustainable Development, who defined the term, and published the report *Our Common Future*.

In the context of the Mediterranean environment, I believe that sustainable development is the optimal solution to help maximize the benefits and minimize the environmental damage, provided that the damage can be redressed.

In some cases, even the maximum benefit is not sufficient to meet the needs of the people. The solution to a problem like this one calls for people who are willing and able to sacrifice.

I believe that the only group of people who can handle these problems, who can think in new ways, and who are able to sacrifice, regardless of their origins and the state of development of their countries, is the youths in the whole region.

So why youths? In fact, youths between eighteen and twenty-five years old are 46% of the total population in the region; this percentage means 170 million persons.

They are widely spread all over the area.
They have enough enthusiasm to make the effort to change.
They care about the future they will live in.
They seek better quality of life in a clean environment.
They are the only group willing to sacrifice so much of their life to ensure better conditions for the coming children, the coming generations.

"...You must carry your oar on your shoulder, walk and walk, until you find people who ignore the sea, who do not put salt on the food they eat, who have nothing to do with the boats..."

Homer, ninth century B.C.

Thank you.

Presentation by
ANDREW SIMMONS
Ministry of Education
President of JEMS Organization
St. Vincent and the Grenadines

Moderator, distinguished guests, fellow participants, ladies and gentlemen:

Special thanks to Legacy, UNEP, and YES for giving me the opportunity to participate in this prestigious conference on sustainable development. I have had the opportunity to live with the world's most dedicated conservationists over the past fifteen days. Although we were representing diverse cultural, political, linguistic, and racial backgrounds from around the world, we were able to break down these barriers and discuss our specific areas of concern -- that of saving our environment for future generations.

Some of us may be confused with phrases such as "the role of future leaders" or "leaders of tomorrow" as they relate to the issue of sustainable development. Do they represent a conspiracy by the adult world to keep us in check? I hope not. We have taken the initiative to participate in this venture so that our children will inherit a pleasant and clean world free of toxic and nuclear waste.

Young people perceive the situation in St. Vincent and the Grenadines -- and other Third World countries -- as chaotic. The future is grim for young people there because political independence left behind a retarded economy which had been exploited for hundreds of years by our colonial masters. The island is characterized as the second poorest state in the Caribbean region. We also inherited an educational system which does not address the developmental needs of the country necessary to carry it into the twenty-first century. This educational system produced illiterates. According to the Fordham Report, the incidence of illiteracy is estimated at 30% to 50% of the adult population. The island has the highest rate of teenage pregnancy within the Caribbean region. For every three live births, there is a mother under nineteen years old. Unemployment is rampant. It is estimated that between 30% to 40% of the working population is without work. However, 60% of the youths may be without work.

We must not forget that poverty in the rural communities breeds other social problems, such as malnutrition, dilapidated housing conditions, and a landless class.

The island is situated geographically within a belt where there is a constant threat of natural disasters -- hurricanes, earthquakes and volcanic eruptions -- which, within the past decade, has frequently destroyed the fragile agriculturally based economy of the country.

Over the past ten years, youths throughout the Caribbean region, especially in St. Vincent and the Grenadines, have developed strategies and initiatives at the community level to counter these harsh problems. These solutions emphasize the preservation and conservation of the environment as a medium to arouse social change.

I have two questions to ask:

1. How can we stop women from cutting the trees in the forest for fuel when the very existence of their families depends largely on the food cooked with these logs?

2. How can we stop the farmer from using these severely toxic chemicals on his farm when he has been convinced over the years that DDT will rid him of locusts and other pests, thus improving the quality and quantity of the yield, which in turn means more money in the home to purchase food and educate his children?

As environmentalists and developers we have to be sensitive and aware of the dynamics involved in these issues. We have to create practical, low-cost, successful alternatives. The answer to these problems from a Third World perspective is sustainable development.

The JEMS Progressive Community Organization -- a community organization based in St. Vincent and the Grenadines -- has developed a very successful program of sustainable development. The organization conceptualizes development as a process in which people are at the center or axis. It enables people to make decisions on the specific course of development their community should follow, thus enhancing the mobilization of community people to work for their own development.

Education is the most important component of the JEMS Program. A full-fledged institute called the JEMS Institute for Popular Education was created in 1985. Its goal is to eliminate the severe illiteracy problem; develop employable skills which lead to employment creation; and promote training in family life education, environment, and community development issues. The curriculum of the institute is developed by the management, participants, and the facilitators within the program. Women's issues are taught as a topic within the institute because of the important role these women play in the development and implementation of the adult education program and community environmental projects.

The organization has developed a community education and development program which reaches over ten thousand people in fifteen villages. The organization uses popular theater as a community teaching strategy. The theater takes advantage of the cultural experiences of the people and uses them to build awareness of environmental and social issues, thus motivating them to do self-help work on community projects.

Numerous projects were developed over the past ten years such as village water projects, beach cleanup projects, reforestation projects, wildlife protection and conservation projects, and solid waste management projects. The organization has developed a model farm to train farmers within the community to have good environmental practices in farming.

I have been associated with the JEMS Progressive Community Organization for ten years both as founder and current president. The organization has demonstrated to the world that young people are initiators and developers of the concept of sustainable development. I have coordinated a very successful solid waste management project on the southern portion of St. Lucia, costing over $200,000 EC using this very model.

From June 26 to July 1, 1988, the Caribbean Conservation Association held an environmental awareness seminar among leading environmentalists throughout the region to examine the JEMS model as part of the entire regional environmental strategy.

Internationally, the work of JEMS is highly respected by UNEP, World Literacy of Canada, and many others. This is a living model for sustainable development for Third World countries at the community or grass roots level.

In conclusion, I recommend that we continue to develop the concept of sustainable development in a realistic and practical manner within the Caribbean and Latin American regions. I recommend that the following be implemented:

A. U.S. multinational corporations and individual governments which are involved in the illicit exportation and dumping of toxic waste in the Caribbean and Latin American regions be charged by the United Nations for committing a crime to humanity.

B. Multinational corporations which have invested in the Caribbean and Latin America return a portion of their profit to support environmental development initiatives at the community and rural levels.

C. Funds that are directed by the superpowers to support civil disturbances in the region be redirected to finance sustainable development initiatives with emphasis on support services for rural women.

D. Funding institutions such as the World Bank, Inter-American Development Bank, and so forth, *should not* fund projects in developing countries unless thorough environmental assessment and analysis proves that their effect on the natural environment is minimal throughout the life of the project.

E. Agencies involved in propagating the concept of sustainable development should create forums like this for young people to share their experiences and develop awareness of the effectiveness of sustainable development for the existence of the human race.

Thank you.

Presentation by
SUSAN DRAKE
U.S. Presidential Management Intern
Environment Department
The World Bank

What will it take to enable today's youth and young professionals to cope with the burgeoning, complex environment and development problems which will affect the very existence of the human race as well as the existence of other creatures?

A few weeks ago, I sat in a World Bank meeting where men and women of all races, ethnic, and religious backgrounds discussed the issues which will have to be addressed in the near future -- issues which have been explored in the Brundtland Commission Report entitled *Our Common Future*.

As I listened, a very bleak picture was formed in my mind. Demographic trends predict large rural to urban migrations which by the year 2050 are predicted to cause approximately 75% of the world's population to live in cities. Global climate will dramatically affect farm belts and desert regions, thus causing mass resettlement. Toxic waste is being produced at a rapid rate and with inadequate disposal methods available because the incineration method is costly and landfills have been found to leak. Internationally, the disposal of toxic waste produced in one country and deposited in another has created much controversy and will have to be resolved soon. In addition, nonpoint source run-off, which includes pesticide run-off from farms, is polluting water sources which provide drinking water.

These problems -- to name a few -- will continue to plague the earth in the future and are beginning to complicate the already difficult tasks of providing people with the basic necessities of life, such as lack of clean water, food, shelter, and health care, and have yet to be addressed adequately. It was evident from the World Bank meeting that issues concerning development and environment are becoming more and more complex and difficult to deal with.

The question which lingered in my mind after the meeting was, "Will my generation be prepared to deal with such multifaceted, multisectoral problems and, if so, how will it deal with them?"

After having talked with many internationals who come from different types of educational systems these past two weeks, I realized that the U.S. educational system tends to encourage people to specialize in technical fields such as business rather than encouraging the development of generalists who study liberal arts or social sciences such as economics or geography. By specializing too early, students do not develop a framework or foundation from which to draw upon to evaluate situations or problems which involve many facets of life or of society. For example, in order to design practical projects to promote sustainable development -- development which will not degrade the environment -- planners and decision-makers must be able to think integratively. However, if they can only focus on one small part of the problem of which they are knowledgeable, the final design of the project will be inadequate to solve the problem. I believe our educational system should provide the foundations for integrative thinking. Education about the environment, for example, and its interrelationship with humans and other sectors, such as industry, must begin in the primary schools and continue up through high school where more sophisticated curriculum would be taught.

It is indisputably clear that many of the serious challenges we face can only be met through cooperative efforts both internationally and domestically -- but it is going to take people with special abilities. Einstein wrote that creativity is of more value than knowledge. Young people are creative, visionary, and idealistic. In our culture, idealism is a dirty word. But idealism when combined with realism and practicalism makes for a well-rounded thinker, planner, and decision-maker. Young people have the unstifled ability to make the linkages between the human and natural environment. They are able to build bridges of communication and cooperation that are necessary for action to take place where others cannot. Why? Because they have not yet become a special interest in the power game, their raison d'etre is not to crush heads to get ahead, they have not realized that something cannot be done, and cynicism has not had a chance to rear its ugly head to crush their precious grains of creativity and to override their desire to make the world a better place. Young people's abilities need to be harnessed -- the well needs to be tapped before it runs dry and mercury creeps in from all sides.

I pose this challenge to local, state and federal (both executive and legislative) government, U.S. corporations, and NGOs. Time is running out to prepare young people for the task of addressing and/or solving domestic and global environmental, social, and economic problems, and to learn how to develop sustainable development policy -- policy which will provide for the needs of the people in ways that protect and restore the natural resource base rather than degrading it.

The United States has attempted to meet the challenge of preparing young professionals for service. I am part of a special program created by the Carter Administration called the Presidential Management Intern Program. The program was established to bring to the government bright young people who have completed their masters degree in areas such as public administration, urban and regional planning, and international relations. We are employed in a particular agency of our choice for two years where we are able to develop skills and expertise in our field. This is accomplished by finding assignments in other parts of the agency or outside of the agency (such as state and local government agencies, NGOs, or international organizations) and/or within the legislative branch. During the two years, the program office prepares seminars to develop our skills in management, and in cross cultural communication and negotiation. Seminars on the media and the legislature are also offered. The program provides young professionals the opportunity to find out how the system works or doesn't work and where their talents can be best utilized to benefit themselves as well as the government.

I have had several opportunities to do interesting environment and development-related work through my various assignments which included working for the Department of Interior, Senator Sanford, and the World Bank. In the Senate Foreign Relations Subcommittee, I helped develop two hearings on sustainable development; at the State Department I wrote the report entitled "United Nations Environment Programme: A Survey of U.S. Participation and Benefits"; and at the World Bank I just completed the Annual Environmental Sector Review.

As a U.S. citizen who is proud of my government and who fully believes in the value of the diversified abilities of my people, I realize that government, corporations, NGOs, and individuals together have the responsibility to create avenues where the innate abilities inherent in the country's human resources (a timeless and limitless resource) are developed and used to the maximum extent. Cooperation among various sectors of society, through the joining of hands in innovative partnerships, such as young professional exchange programs, fosters opportunities for mutually beneficial dialogue and understanding to meet the difficult challenges which lay ahead for our country and the world.

The vision for an integrative process must be realized by people in positions of authority. The facilitators of such a process will be those who are able to clearly see the long-term benefit of up front investment in their capital stock -- in their people -- without seeing an immediate return on the investment, and who are willing to take all the necessary actions and sacrifices to see that once the process has begun, it continues. Such people are difficult to find but they are out there and I have had the privilege to work with such great people.

Inspiration is a two way street. Young people are inspired by those who are selfless in their quest to protect the environment and to help people help themselves. Young people with idealistic thoughts and expectations, in a positive sense, inspire those who, for one reasons or another, have forgotten how to dream.

The Genesis scripture says that after God created the earth "He looked upon all He had made and said it was good." Men and women were given the task of stewarding this wonderful creation. Everyone has a responsibility and a stake in ensuring a healthy environment for all of its inhabitants.

Having the opportunity to participate in this sixteen day seminar has meant a great deal to me as well as being able to share with you, this morning, some of my heartfelt thoughts. I hope that I have inspired you to think of ways to participate in the stewardship of human resources, especially young professionals, and the natural resources found on this good and well- designed earth.

CHAPTER 8

THE CALL TO ACTION

Presentation by
DON LESH
Global Tomorrow Coalition

I want to express my appreciation to Legacy International for inviting me to this illustrious gathering, to the World Bank for providing the facilities that we are enjoying here, and to all of you hardcore members who have survived to this point.

After two weeks of intensive engagement with the issues of sustainable development and detailed discussions on conservation, resource use, population growth, environmental protection, and so on, I've been asked to talk about how we organize to make something happen.

You have heard from a wide variety of outstanding congressional experts and leaders from the corporate community, such as Phil Masciantonio and Bill Brown, and from this outstanding panel of NGO leaders who have just spoken to you, among them Joan Martin-Brown of UNEP. I'm not going to talk much about Global Tomorrow Coalition because those of you who are not members of the 20-person seminar who were the core group here may not realize that last Monday in Annapolis we had a very interesting and worthwhile session with the seminar members.

I would, however, like to share some thoughts with you about the process of sustainable development. What are we trying to do to achieve it? What can we say about it? In the process of questioning, let's refrain from looking at specific parts of the issues and instead look at the context and the basic concepts. We should discuss some of the obstacles, some of the opportunities, and perhaps suggest some ways we can take advantage of both.

I think we have to recognize, first and foremost, that everything we are doing here, everything we are talking about -- from the moment that this interesting seminar started two weeks ago until this moment -- is a process that reflects fundamental historical change. And *we* are the agents of that change, whether we believe it or not. We must recognize that change is difficult in every society, and change always hurts most the people who have the greatest vested interest in the status quo. So, we should not always expect our message to be received with open arms by those in authority.

There is a quotation that I particularly appreciate from Woodrow Wilson, which was recently quoted by the historian, Arthur Schlesinger, Jr., in an article in *The Washington Post* "Outlook" section. I'd like to share it with you, because even though it was directed at the United States, it says a great deal about what we are doing here. "America," Woodrow Wilson wrote about a century ago," is now sauntering through her resources and through the mass of her politics with easy nonchalance. But presently, there will come a time when she will be surprised to find herself grown old -- a country crowded, strained, perplexed -- when she will be obliged...to pull herself together, adopt a new regiment of life, husband her resources, concentrate her strength, steady her methods, sober her views, restrict her vagaries, and trust her best, not her average, members. *That* will be the time of change." I think we are part of that change; a change that not only affects the United States, but affects the entire world. The quotation tells us something about this era of transition, as we move tentatively and somewhat grudgingly towards the concept of sustainability.

When we talk about organizing for sustainable development, we should not think about the logistics of how to organize a community meeting, but ask ourselves some simple questions. Where are we going? What are we doing to our land, water, air, and oceans? How are those results that we see and begin to see more clearly as time goes by, related to numbers of people, the demands that they and we are making for basic needs, for development, and for progress? Simultaneously, what is happening to the rest of the world -- to the rest of life on earth: the birds, animals, and plants? How is that related to food supply, mobility, and habitat? How much is our fault? How much does it matter? Should we even care?

What do the emerging answers tell us about threats to our own health, to the health of our children and grandchildren now and in the future? What are the long-term costs and benefits of the choices that are, or are not, being made now? What kind of future do we seem to be heading for? Is this what we really want for ourselves and for our future generations? If not, what kind of future would we like? What goals should we set? Once we have those goals in mind, what needs to be changed in the current structure, and what needs to be preserved? What new steps do we want to undertake in understanding an action? What changes do we want to make in the structures and institutions of our economy, government, educational system, science, and technology?

These are not new questions. Earlier today, one of the speakers commented that some of these questions have been asked for centuries, since before the birth of Christ. Many of them have been asked in various forms in the last two decades in very pointed ways by, and among others, the Club of Rome in the book, *The Limits to Growth*; by the OECD study, *InterFutures*; by all the efforts that took place in 1970 on Earth Day; by the 1972 Stockholm Conference on the Human Environment; by the IUCN World Conservation Strategy; by the *Global 2000 Report* in 1980; by the continuing work of a whole series of organizations (many of which are represented today) such as the Worldwatch Institute, the World Resources Institute, and others.

All these efforts are sending us messages. They are telling us something. They are asking us about the need for a change -- change whose agents we can consider ourselves today. We haven't always liked hearing those questions and, in many cases, we have disliked even more the conclusions. We tend to reject those ideas because we find them uncomfortable. As we look at what's been happening in the recent past -- all the discussions we read in our daily press -- we must ask ourselves how accurate, how stimulating, how important some of those messages have been that we have ignored.

After we look at these questions in that context and think about where we're going, we must ask ourselves, "What are the obstacles? What do we have to overcome to achieve our goal?" I have used the United States as an example because we know it best; and I want to emphasize the point that when we discuss sustainable development, we are talking as much about the United States as about the rest of the world. We must not fall into the fallacy of self-exclusion. These issues affect us today -- our society, economy, government -- as much as they affect any other country.

My own view is that the challenge is not so much a matter of overcoming obstacles in the sense of categoric opposition, as it is a conflict with prevailing assumptions and mind-sets. And the three greatest barriers are inertia, ignorance, and procrastination. Now, how do these become so powerful? Let's look at some elements in the U.S. picture that affect the way in which we receive the messages of organizations such as Worldwatch, or publications such as the *Global 2000 Report*.

The first element is geography. Our country started with an immense continent with huge rivers and forests, rich mineral deposits, and an enormous wealth of topsoil measured in feet, not inches. In many ways, this image of the almost endless wealth of our continent still affects the judgments that we Americans draw, even though we are finally seeing some limits to those resources today.

The second element is the frontier mentality which is not only a Frederick Jackson Turner thesis, but something that affects us even today, long after all the real frontiers may have been reached throughout the country. I mean the kind of mentality that says, "If we don't like it here, we can go elsewhere. We can make decisions, and just move on."

The third element is economics. It is with good reason that there is a tremendous faith in the private enterprise system. After all, we can look around and see the unprecedented levels of affluence and the quality of life that our system has attained. It's very difficult to pose the question, "Has that system, and those rewards -- which are so strong, so real, and so manifest to all of us -- come up against some kind of limit, where they are no longer applicable?"

We have a sense -- and I felt it coming from the corporate comments in the panel this morning -- that, at times, we may be placing too much responsibility on the corporate system. The corporation is designed to take natural resources and extracted materials, and turn them into finished products. Its goal is to meet the demands, needs, and desires of the public, and in the process, produce a profit for shareholders. That's what it is supposed to do and that's what it does. If we then ask that system to take into consideration long-term factors of sustainability and so on, are we asking too much of the private enterprise alone?

The fourth element is faith in science and technology, and we have ample reasons to have that faith. Most of us belong to the generation that watched the space exploration programs and saw men walk on the moon. The recent Challenger catastrophe, of course, dashed a lot of that confidence; but I think it is basically still there in our society. We believe, very strongly, that science and technology can always provide a solution, and with good reason. But now, we are beginning to be aware of not only the benefits, but also the costs of those scientific and technological solutions.

There is something in this debate about sustainability that suggests the federal government should have a role in the long-range planning, but that idea is anathema to many people. Many people are predisposed against anything that smacks of authoritarian central planning; they don't want a Gosplan, or socialism, and so on. We need to be very careful about defining the appropriate governmental role. In the early days of the Reagan administration, some of the spokesmen for the administration had a great deal of fun with the concept of national foresight, and talked about the creation of a new post -- the "Foreseer General." So, we must appreciate that there is great suspicion about solutions that involve a larger government role.

Some concepts of religion have something to do with this, too. If we press the point, much in our background -- the Protestant Ethic, for example -- transmits messages that conflict with some of the new demands of sustainability. The injunction to go forth, be fruitful, multiply, for example, is great when you're leaving the Ark, but not at this point.

There is also something about isolation, about our uniqueness, about the two big oceans on our borders that have convinced Americans that they're different, not really part of the rest of the world. They say to themselves, "Everybody else may have troubles, but we'll still survive." If any one of you has had, as I have, the experience of trying to deal with American citizens in U.S. embassies and consulates overseas, you realize the touching faith they have in a U.S. passport. In some people's eyes, that passport means exemption from the laws of the host country. They are surprised and dismayed to find that it does not.

Finally, the last element is that we think we are the world's crisis managers, par excellence. We think, "O.K., there is a problem. We'll appoint a commission, they'll come in, look it over, make the best resources available, and we'll solve it."

There's a story that is worth telling because I think it illustrates this point. It's about an airline pilot who was called in for his annual physical. At the final review, the doctor said, "Sam, I'm sorry. You flunked. I can't approve you; you're out." The pilot looked at him questioningly. The doctor then said, "Well, it's your depth perception. It's just gone. How in the world have you been handling landings?" And the pilot responded, "Well, I use the Jesus Christ method." The doctor then looked a little puzzled. The pilot said, "I just get the plane on the radio beacon and head for the airport, and at the right distance, I begin to cut my altitude. I keep right on until pretty soon my co-pilot says 'JESUS CHRIST!' and then I level it off and I make my landing."

Well, we've been addressing a lot of questions in our society by the Jesus Christ method. We think we can wait until we see the problem, make the adjustments at the last minute, and then solve it. It doesn't work very well when the problems have long lead times that can span decades. It doesn't work well when the systems in which these problems have to be decided have long delays in the decision-making process.

If we look beyond these obstacles for a moment, and focus instead on some of the opportunities, I would say that there are things on the horizon that should encourage all of us when we think about organizing for sustainable development. One of them is that some very interesting things are being said by people in some very interesting places. Listen and see whether you can tell me the source of some these quotes. For example:

> "Degradation of environmental and natural resource systems worldwide is assuming massive proportions. And if these systems that underpin and support national economies collapse, the social and political consequences are likely to assume wider dimensions, thereby posing a threat to regional security and international peace."

Could this be from an apocalyptic report by The Club of Rome? The Worldwatch Institute? No, that is from the 1984 report of the World Bank.

> "Sustainable development implies a long-term perspective and understanding of the critical linkages between environmental protection and economic development. In other words, it is not just development we are hoping to sustain, but a global environment that sustains all life."

That is from a speech by Alan Woods, the Administrator of the U.S. Agency for International Development.

> "We will emphasize the importance of protecting renewable resources to reduce pollution and waste. Only by defending nature can we ensure the survival of man."

That is a quote from Barber Conable, the President of the World Bank.

> " The World Bank and the NGOs are quite different. Precisely because they are so different, they have a lot to learn from each other at the global level, the national level, and the grass roots level. By working together, the Bank and the NGOs will both be more effective forces in the world's gathering effort to eliminate mass poverty. Let us act in common on the urgings of Teilhard de Chardin who said, 'The age of nations has passed. It remains for us now, if we do not wish to perish, to set aside the ancient prejudices and build the earth."

Is this quote from a religious leader? The Sierra Club? No, that is Moeen Qureshi, the Senior Vice-President for Operations of the World Bank.

I think there are several things happening. Obviously, people are saying things of interest, and also doing things. One of the things that the Bank has done, which we all must applaud and encourage, is the creation of its new Department of Environment. This is only coming into its own at the present time, but it is a hopeful sign for the future.

Another example of opportunities that now may be opening is in the communication media. This is not in any sense an exhaustive selection; this is only one person's quick observation. In part, it is affected by the fact that I was outside of the United States during June and the early part of July. When I returned, I think I may have been a little bit more alert to the issues and stories that were appearing on television and in the newspapers.

What did I find? A major article in *Newsweek* on "Global Warming and the Greenhouse Effect," and daily reports of beach pollution throughout the northern part of the United States, especially in New Jersey and elsewhere. A week or two later, there were simultaneous cover stories in *Time* and *Newsweek* on ocean pollution. In one of the little weekly television magazines that circulated by *The Washington Post*, the front page feature was an Audubon special with the title, "Environmental Warning - The Bird's Problem is Man's Problem." In the last week, in almost successive days, the NBC "Today Show" has had interviews with Lester Brown of the Worldwatch Institute; with Jim Fowler on wildlife preservation, particularly on loss of the black rhino in Africa; and also special features on acid rain and ocean pollution. There was a major article in the "Outlook" section of *The Washington Post* addressing the fact that we should not be complacent about what's happening in the world population growth.

I realize that these are just straws in the wind, little bits and pieces. You can name many other things, too. We should not over-interpret them but remind ourselves that, not so very long ago -- in fact very recently -- we sat around meetings like this and expressed great concern about gaining access to the media. We were wondering how can we present our messages not only through heavy, long documentaries, but through the news. How could we break into daily reporting? Well, somehow we're doing it. We should realize that this is a new opportunity for us to exploit.

Things are happening on the political scene as well. Earlier, I mentioned the names of some of the speakers addressing this conference. Let me add a few more. Under the inspiration of the global warming issue and the meeting in Toronto, some very promising and far-reaching legislation on acid rain and atmospheric protection is being proposed by Senator Tim Worth of Colorado and others in the Senate. Hearings have been held in the Senate by Senator Terry Sanford of North Carolina on the significance of the report of The World Commission on Environment and Development, and the whole concept of sustainable growth, for U.S. foreign assistance policy. There is a real possibility (not in this session of Congress, but after the election) to enact a new Foreign Assistance Bill for the first time in years. This is not a continuing resolution but actually a new bill, which Gus Speth of The World Resources Institute has said should be called the Sustainable Development Act, not the Foreign Assistance Act. After many years, there has also been the re-authorization of the Endangered Species Act.

Another issue which you probably are not aware of arose in the House of Representatives, where Congressman Richardson of New Mexico held a hearing recently on a bill to reach a settlement between the United States government and the Zuni Indian tribe in New Mexico and Arizona. We might ask, "Why should that concern us?" Well, as Americans, it should concern us first because it's a very tiny step towards a measure of equity in contrast to what has happened in the past. But beyond that, this bill would end a longstanding litigation against the U.S. Government by transferring twenty million dollars to the Zuni tribe. Eight million dollars would go to pay off past debts, and the legislation specifies that twelve million dollars would go into a permanent fund for the "sustainable development" of the watershed and the management of natural resources in the Zuni lands. It would include, for example, the creation of something which might be called a Zuni C.C.C. (Civilian Conservation Corps), a youth training program to carry out the local level work with the support of a very sophisticated computer monitoring system. This is a very small example but one, I think, of local, national, and even international significance. It tells us how the concept of sustainable development can be built into the structures of our societies.

I think it's time to reorganize, to redouble our efforts, to think about innovative ways we can use these opportunities and overcome these obstacles. I am not going to go into a detailed explanation of how we might do that, because I want to present a different kind of suggestion that some of you may already know. It comes from perhaps an unexpected source, the novelist Kurt Vonnegut. You may have noticed that, in the February issue of *Time* magazine, he responded to a challenge to write a letter to the generation of 2088, a hundred years from now, in an advertisement sponsored by the Volkswagen Corporation. Vonnegut said, among other things, "Now that we can discuss the mess we are in with some precision, I hope you have stopped choosing abysmally ignorant optimists for positions of leadership." (This has no relevance whatsoever, of course, to the current presidential campaign). "They were useful only so long as nobody had a clue as to what was really going on -- during the past seven million years or so."

"The sort of leaders we need now are not those who promise ultimate victory over Nature through perseverance and living as we do right now, but those with the courage and intelligence to present what appear to be Nature's stern, but reasonable, surrender terms." And then he goes on to enumerate several of those terms:

1. Reduce and stabilize your population.
2. Stop poisoning the air, water, and the topsoil.
3. Stop preparing for war and start dealing with the *real* problems.
4. Teach you kids -- and yourselves, too, while you're at it -- how to inhabit a small planet without helping to kill it.
5. Stop thinking that science can fix *anything*, if you give it a trillion dollars.
6. Stop thinking that your grandchildren will be okay no matter how wasteful and destructive you may be, since they can go to a nice new planet on a spaceship. That is *really* mean and stupid.
7. And so on. Or else.

Ladies and gentlemen, I could not suggest a more appropriate conclusion than that. Thank you very much.

Presentation by
DR. STEPHEN LINTNER
Senior Environmental Specialist
Environment Division, Technical Department
Europe, Middle East, North Africa Region
World Bank

Thank you very much, Dr. Kaufman, for a wonderful introduction. The concept of Youths for Environment and Service (YES) stems from a concern shared by those in the international development community and nongovernmental organizations to focus the interest of young people on environment and development issues. The program recognizes that approximately half the population of the earth is under twenty-five years of age and that these individuals will become our future leaders. The program seeks to interest youth in actively and constructively examining environmental issues, in the creation of organizational networks, and in forming long-term bonds.

My comments today will focus on sustainable development in the Mediterranean Region. This region has been the focus of several important environmental initiatives. The foundation of these initiatives was laid over a decade ago when the United Nations Environment Programme successfully brought countries in the basin together to support the Mediterranean Action Plan (MAP). In 1988, the European Investment Bank and the World Bank began preparing the Environmental Program for the Mediterranean (EPM) which provides policy and investment recommendations in support of objectives identified by MAP. The development of YES also grew from this concern about protection of the Mediterranean environment. The YES program is an outgrowth of the United Nations Environment Programme (UNEP) sponsored conference entitled, "Mediterranean Youth and Environment Conference", held in Cartagena, Spain in 1985.

The Mediterranean Sea and the surrounding lands are a major crossroads of history, cultures, and commerce. It is also an area where the flora and fauna of Africa, Asia, and Europe come together. The sea and its extensive coast line provide habitats for a wide range of animals and extensive opportunities for recreation. However, the Mediterranean remains a fragile environment which requires careful management. The limited land and water resources of the region are under intense pressures from urban expansion, industrial growth, increased tourism, and coastal development, while the irreversible conversion of restricted areas of wildlands and the degradation of fish habitats is proceeding at a rapid rate. This development pressure weakens the stability of the region.

Sustainable development in the Mediterranean region should strive to return a balance between man and nature. Recognition must be given to the need to manage terrestrial, coastal, and marine resources as largely man-modified environmental systems. Nature must be accommodated through the

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The views expressed in this presentation are those of the speaker and should not be attributed to the World Bank.

conservation of remaining natural areas, the rehabilitation of degraded areas, and the adoption of more ecologically sensitive approaches to resource management. Much greater attention needs to be given to the dynamic nature of social and economic development. All plans need to recognize rapid changes in total population, the redistribution of population, changes in technology, and different consumption patterns in the future. The UNEP coordinated Blue Plan for the Mediterranean Region provides an example of a "futurist" analysis which can identify potentially significant trends before they occur.

The development of an action program to address both present and future problems must recognize the key role played by timing and sequencing of activities as well as the constraints imposed by variable levels of commitment, institutional capability, and the availability of funding. Critical to any successful program is political and social commitment. In the Mediterranean this is especially important due to the large number of nations which share the sea. Timing and sequencing of actions need special attention; for example, the protection of groundwater resources from contamination by an industrial facility may need to be addressed before the control of air emissions from the same source. Institutional capability needs to be carefully considered in order to assure that proposed actions can be undertaken, management programs implemented, and facilities operated and maintained on a long-term basis. It must be recognized that the availability of funds for capital investments and recurrent costs is limited and that environment and natural resource programs must compete with other sectors.

Priority should be given to addressing problems which are irreversible, such as the conversion of critical plant and animal habitats, including wetlands; the establishment of recreational areas; and degradation of archaeological and historical sites. Continued programs of investment are required to treat domestic and industrial wastewaster, control air pollution, and improve solid waste management. Emerging problems, such as the management and safe disposal of hazardous and toxic wastes, need to be recognized and resolved in the near term. Steps should also be taken to scientifically examine long-term regional and global environmental trends in the Mediterranean such as sea level rise and transboundary air pollution.

Key elements of a program to restore the balance between man and nature in the Mediterranean should include the following items:

- Political and social commitment to protect the environment and to manage natural resources;
- recognition of the long-term economic benefits derived from the sustainable use of the environment and natural resources and the incorporation of these precepts into planning and decision making;
- adoption of new policies concerning environment and development;
- establishment and enforcement of laws and regulations to protect the environment;

- adoption and use of integrated planning methods for terrestrial, coastal, and marine ecosystems;

- investments in preventative actions to avoid the creation of new environmental problems; and

- institutional development and training for both public and private organizations, including nongovernmental organizations. This should include major support for public education programs.

Sustainable development in the Mediterranean region requires a long-term commitment to resolve environmental problems of the past, to better manage presently available resources, and to plan for improved management in the future. It is a commitment to work at a variety of levels to achieve objectives. Some problems are global, others regional and national, and many are local. The problems of the Mediterranean are those of a specific region; however, the process used in their identification and resolution can be transferred to a variety of locations and applied at a number of scales.

My hope is that bonds developed between individuals and organizations participating in this program prove to be sustainable. Furthermore, I believe that the lessons learned from comparison of conservation experiences in the Caribbean Sea, Chesapeake Bay, and the Mediterranean Sea stimulate a diversity of approaches to promoting sustainable development in a world of increasingly common problems.

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LEGACY INTERNATIONAL

Legacy International is a non-profit educational organization fostering cross-cultural understanding and dialogue on critical global issues through training and action programs. Core subject areas include environment and development, conflict resolution, and leadership training and skill enhancement. Fueled by a positive commitment to the future, Legacy activities are a catalyst for youths and for business, government, academic, and civic leaders to work cooperatively on local, regional, and global needs.

Legacy has been working in the area of environment since 1985 through the establishment of YES (Youths for Environment and Service) in the Mediterranean region and more recently in the United States. Sustainable development seminars and projects include:

Sister Seas Program - A seminar for young professionals and leaders of the business, civic, and government communities which examined the Chesapeake Bay as a model for sustainable development.

Global Viewpoints Forum - Presentations on critical global environmental issues and regional conflicts from the perspective of government policy makers.

Virginia Growth Management Forum - A three day conference focusing on sustaining the economic and environmental future of the State of Virginia.

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